60FW-53E
70FW-53E
81FW-53E

SHARP SERVICE MANUAL

SEJB**FW53E00
Issued: 1st Dec. '99

DA-50W CHASSIS

PAL / SECAM B/G D/K SYSTEM COLOUR TELEVISION

MODELS 60FW-53E 70FW-53E 81FW-53E

In the interests of user safety (required by safety regulations in some countries) the set should restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

60FW-53E
70FW-53E
81FW-53E

ELECTRICAL SPECIFICATIONS

•Power Input .....220V-240 Volts AC 50Hz

•Power Consumption
Normal Operating.....100W (60fw53E)
155W (70fw53E)
155W (81fw53E)
Stand-by Operating.....1W

•Audio Power Output Rating

Internal Left Speaker.....10W (MPO)

Internal Right Speaker.....10W (MPO)

Internal Centre Speaker (70FW-53E, 81FW-53E).....10W (MPO)

Speakers

Left / Right.....8Ω 12W, 4 x 10cm

Centre (70FW-53E, 81FW-53E) .....
.....7Ω 12W, 6 x 13cm

Convergence.....Self Converging System
Focus.....Bi-Potencial Electrostatic
Sweep Deflection.....Magnetic

•Intermediate Frecuencies
L'.....33.9MHz
L, B/G, D/K.....38.9MHz

•Sound Carrier Trap
L'.....40.4MHz
L, D/K.....32.4MHz
B/G.....33.4MHz

•Adjacent Sound Carrier Trap
L'.....32.4MHz
L, D/K, B/G.....40.4MHz

•Adjacent Picture Carrier Trap
L'.....41.9MHz
L, D/K.....30.9MHz
B/G.....31.9MHz

•Aerial Input Impedance
VHF/UHF.....75 ohm Unbalanced

•Tuning Ranges.....48.25MHz thru 855.25 MHz
CATV Special Channels

•White Level
Set brightness control to get total picture tube cathode current of 600 milliamperes under no signal condition. Maximum necessary correction of each picture tube cathode current to get 8550 degrees K+1MPCD screen temperature should not exceed 15% of its original value.
X=0.290 Y=0.300

Specifictions are subject to change without prior notice.

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptable, when servicing this chassis.
To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified sercice personnel.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire (such as test probe) between picture tube ground tag and high voltage lead. (AC line cord should be disconnected from AC outlet).

1. Picture tube this receiver employs Integral Implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions are servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. When repairing the circuit, be sure not to increase the high voltage to more than 32 KV, (at beam 1300μA) for the set.
2. To keep the set in a normal operation, be sure to make it function on 29KV±1KV (at beam 1300μA) in the case of the set. The set has been factory - adjusted to the above mentioned high voltage. If there is a possibility that high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-Ray radiation.

BEFORE RETURNING THE RECEIVER

In addition to the checks necessary as a result of a repair having been carried out, the following additional safety checks should also be made before returning the units to the user.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not logged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fish papers, cabinet backs, adjustment and compartment covers or shields, insolation resistor-capacity networks, mechanical insulators etc.

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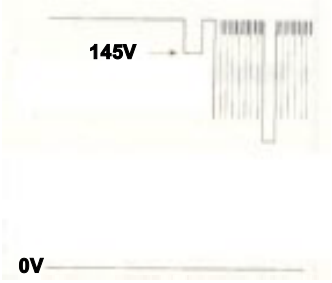
SERVICE ADJUSTMENTS

All the adjustments required for this chassis will be done in Service Mode, except G2 and Focus.

• G2 ADJUSTMENT

1.Receive cross hatch pattern signal.
2. Set contrast to 80/100 and brightness to 40/100.
3. Connect the oscilloscope to the red cathode and adjsust G2 to read 145V on the sensor pulse as in the drawing:



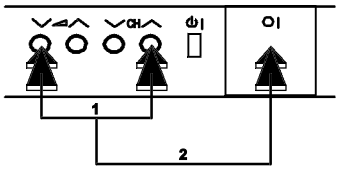
NOTE:
Oscilloscope should be adjusted for vertical TV field trigger and synchronized with wideo signal.

• SERVICE MODE FUNCTION

This mode function is provided to assist with the settings of those adjustments that may vary from one Picture Tube to another, or between models.

In order to use the Service Mode:

1. Connect Test Pattern signal to antenna terminal.
2. Press main switch to «OFF».
3. Press volume-down and channel-up buttons and main switch to «ON» simultaneously.



The required adjustments can then be made from the Remote Control Unit.
The only buttons required are the following:
Up/Down-channel for movement in adjustment options menu; Up/Down-volume are used to carry out an adjustment in said menu; ON/OFF is used to memorize a new adjustment.

Adjustment menu is as follows:

-SERVICE SOFTWARE AND HEXADECIMAL COUNTER DISPLAY: «SW ON XXXX SW OFF XXXX HOURS ON XXXX
-HORIZONTAL SHIFT.
-EAST WEST WIDTH.
-PIN PHASE.
-PIN AMP.
-UPPER CORNER CORRECTION.
-LOWER CORNER CORRECTION.
-VERTICAL LINEARITY.
-VERTICAL AMPLITUDE.
-S CORRECTION.
-VERTICAL SHIFT.
-RED GAIN.
-GREEN GAIN.
-GREEN CUT OFF.
-BLUE CUT OFF.
-ALTER NVM PAGE / ALTER NVM POSITION / ALTER NVM VALUE.
-TELETEXT MIX MODE CONTRAST.
-TELETEXT CONTRAST.
-OSD CONTRAST.
-DVCO ADJUSTMENT (Only PAL).
-DVCO ADJUSTMENT (Only NTSC).
-AGC ADJUSTMENT.
-AFT ADJUSTMENT.
-OPC VALUE (Not Available in this model).
AUTOINSTALLATION ON/OFF.

To exit service mode, press main switch ot OFF.

Adjustment menu is as follows:

All adjustments for Geometries are based on internal pattern (fig.1)
The procedure for making adjustments is as follows:

Horizontal:
-Adjust HORIZONTAL SHIFT.
-Adjust E-W WIDTH.
-Adjust PIN PHASE.
-Adjust PIN AMPLITUDE.
-Adjust UPPER CORNER CORRECTION.
-Adjust LOWER CORNER CORRECTION.

Horizontal:
-Adjust VERTICAL AMPLITUDE.
-Adjust S-CORRECTION.
-Adjust VERTICAL SHIFT.
-Adjust VERTICAL LINEARITY.

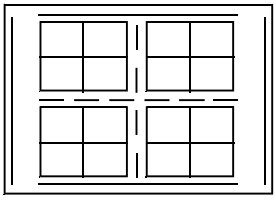


Fig.1

1– HORIZONTAL SHIFT

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, picture moves to the left.
c) When volume-down button is pressed, picture moves to the right.
d) Adjust the horizontal location to obtain picture centering (fig. 2).

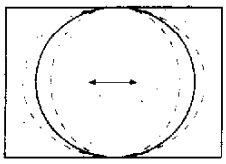


Fig. 2

2– E-W WIDTH

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, horizontal scanning increases.
c) When volume-down button is pressed, horizontal scanning decreases.
d) Adjust the horizontal amplitude to obtain 9% overscan (fig. 3).

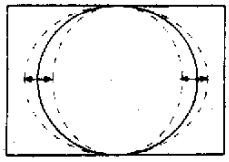


Fig. 3

3– PIN PHASE

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, slide pincushion changes.
c) When volume-down button is pressed, slide pincushion changes.
d) Adjust the PIN PHASE to obtain condition as in (fig. 4).

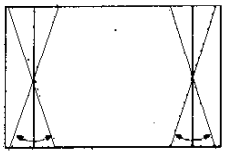


Fig. 4

4– PIN AMPLITUDE

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
c) When volume-down button is pressed, slide pincushion changes from pincushion to barrel shape.
d) Adjust the PIN AMPLITUDE to obtain condition as in (fig. 5).

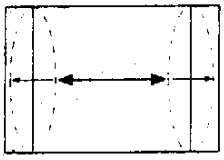


Fig. 5

5– UPPER CORNER CORRECTION

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
c) When volume-down button is pressed, slide pincushion changes from pincushion to barrel shape.
d) Adjust the UPPER CORNER CORRECTION to obtain condition as in (fig. 6).

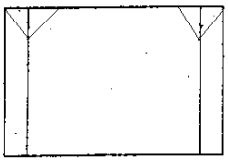


Fig. 6

6– LOWER CORNER CORRECTION

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
c) When volume-down button is pressed, slide pincushion changes from pincushion to barrel shape.
d) Adjust the LOWER CORNER CORRECTION to obtain condition as in (fig. 7).

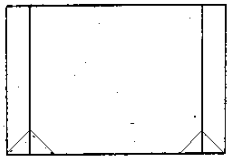


Fig. 7

7– VERTICAL LINEARITY

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, upper picture scanning decreases and lower picture scanning increase.
c) When volume-down button is pressed, upper picture scanning increases and lower picture scanning decrease.
d) Adjust the vertical symmetry to obtain symmetry scanning between upper and lower picture (fig. 8).

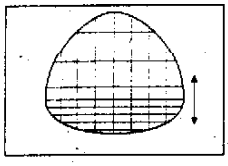


Fig. 8

8– VERTICAL AMPLITUDE

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, vertical size of picture increases.
c) When volume-down button is pressed, vertical size of picture decreases.
d) Adjust the vertical size to obtain overscan (fig. 9).

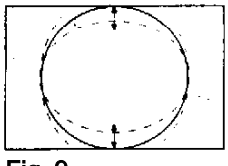


Fig. 9

9– S-CORRECTION

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, upper and lower scanning decreases, and center scanning increases.
c) When volume-down button is pressed, upper and lower scanning increases, and center scanning decreases.
d) Adjust the S-CORRECTION to obtain a balance between upper, lower and center (fig. 10).

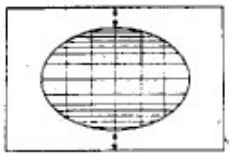


Fig. 10

10– VERTICAL SHIFT

a) Internal pattern signal will be displayed.
b) When volume-up button is pressed, picture moves up.
c) When volume-down button is pressed, picture moves down.
d) Adjust the horizontal location to obtain picture centering (fig. 11).

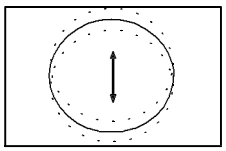


Fig. 11

COLOUR ADJUSTMENT

The following adjustments are only required when Picture Tube, IC801 or IC1801 are changed:

1. RED CUT OFF / GREEN CUT OFF / BLUE CUT OFF

1.1 Adjust G2.
1.2 Tune a white card.
1.3 Adjust colour to minimum.
1.4 Position colourimeter in the center of screen.
1.5 Adjust brightness and contrast to obtain a luminance of ≈20 NITS.
1.6 Operate in Service Mode and select location RED CUT OFF / GREEN CUT OFF / BLUE CUT OFF, to obtain colour coordinates:

X=0.290 ± 0.015 Y=0.300 ± 0.015

To increase press volume-up button and to decrease press volume down button.

RED CUT OFF	alter «X» coordinate.
GREEN CUT OFF	alter «Y» coordinate.
BLUE CUT OFF	alter «X» and «Y» coordinate.

2. RED GAIN / GREEN GAIN / BLUE BAIN

2.1 Using brightness and contrast buttons, select a luminance of ≈120 NITS.
2.2 Operate in Service Mode and select location RED GAIN / GREEN GAIN / BLUE GAIN, to obtain colour coordinates:

X=0.290 ± 0.015 Y=0.300 ± 0.015

To increase press volume-up button and to decrease press volume down button.

RED CUT OFF	alter «X» coordinate.
GREEN CUT OFF	alter «Y» coordinate.
BLUE CUT OFF	alter «X» and «Y» coordinate.

2.3 Exit Service Mode and check colour coordinates «X» and «Y» at 20 and 120 NITS. It may be necessary to repeat procedure 1 and 2 of COLOUR ADJUSTMENT.

ACCESS TO NVM

Press CH ∧ to move in the following sequence:
ALTER NVM PAG⟹ALTER NVM POS ⟹ALTER VNM VAL to alter presseting adjustments, press up/down-volume buttons on ALTER NVM VAL.

⚠ CAUTION: Do not change NVM VALUE to avoid risk of serious damages to TV set.

CONTRAST ADJUSTMENT

Up/Down volume buttons are used to adjust the contrast of the following items:
-TELETEXT MIX MODE CONTRAST.
-TELETEXT CONTRAST.
-OSD CONTRAST.

DVCO ADJUSTMENT (PAL)

a) Receive Philips pattern signal.
b) When Stand-by button is pressed (Remote Control Unit), start

DVCO ADJUSTMENT (NTSC)

Adjust not required.

AUTO INSTALLATION OFF/ON

When ON is selected, the TV will perform the autoinstallation sequence as soon as service mode is removed.

PROTECTIONS CANCEL

a) Connect Test Pattern signal to antenna terminal.
b) Press main switch to OFF.
c) Press volume-down and channel-up buttons and main switch to ON simultaneously.
d)»Service Software Vxx.xx» appears o screen.
e)Press main switch to OFF.

AGC ADJUSTMENT

a) Tune the TV into CH10 (pattern generator).
b) Adjust the signal strength to 57dB µV
c) Press the stand-by button on the Remote Control (red button).
The TV will perform automatically the AGC.

AFT ADJUSTMENT PAL BG, SECAM L

a) Tune the TV into CH69 (pattern generator).
b) Press the stand-by button on the Remote Control (red button).
The TV will perform automatically the AFT.

AFT ADJUSTMENT SECAM L'

a) Tune the TV into CH04 (pattern generator).
b) Press the stand-by button on the Remote Control (red button).
The TV will perform automatically the AFT.

DA50W PWBs

60FW53E
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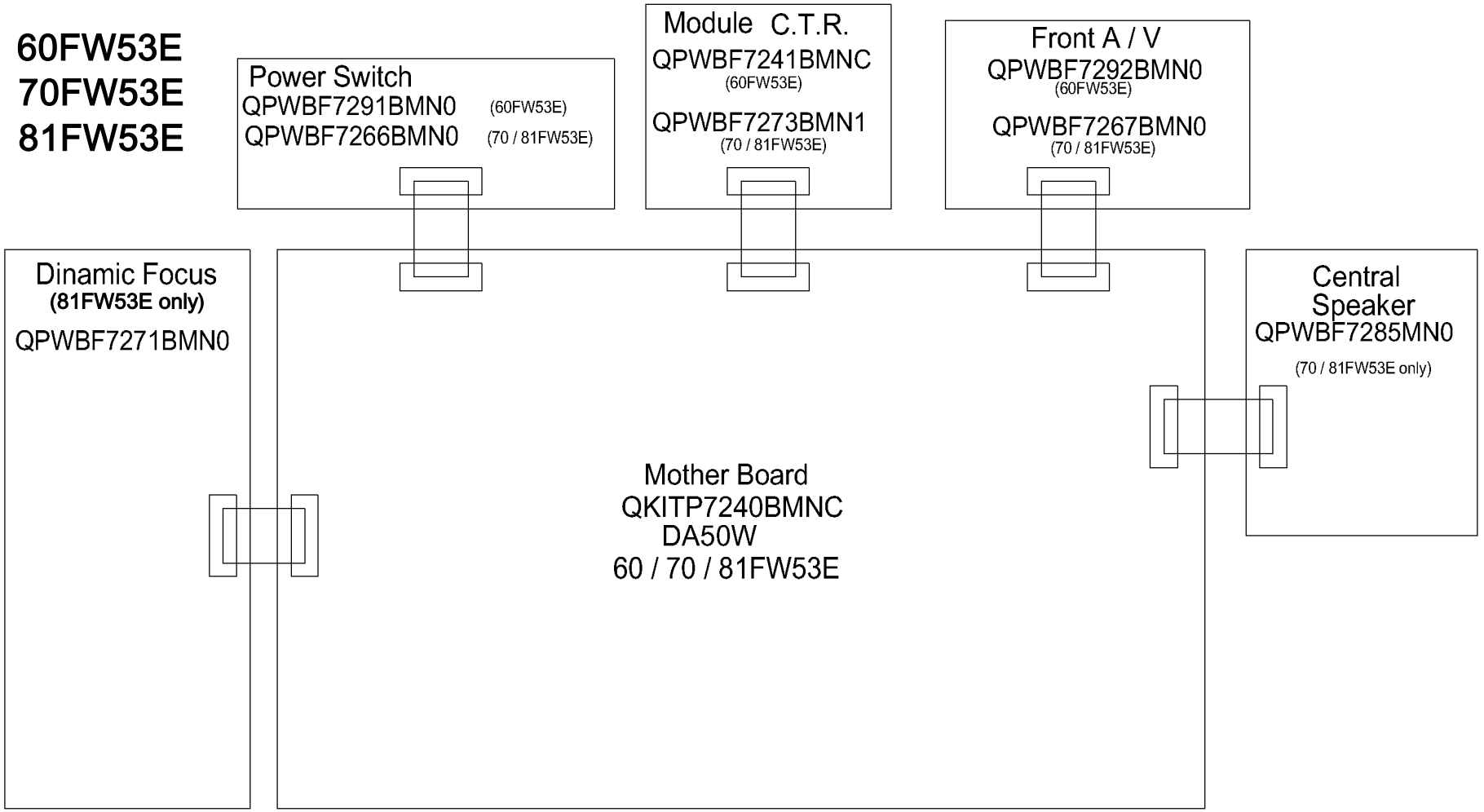
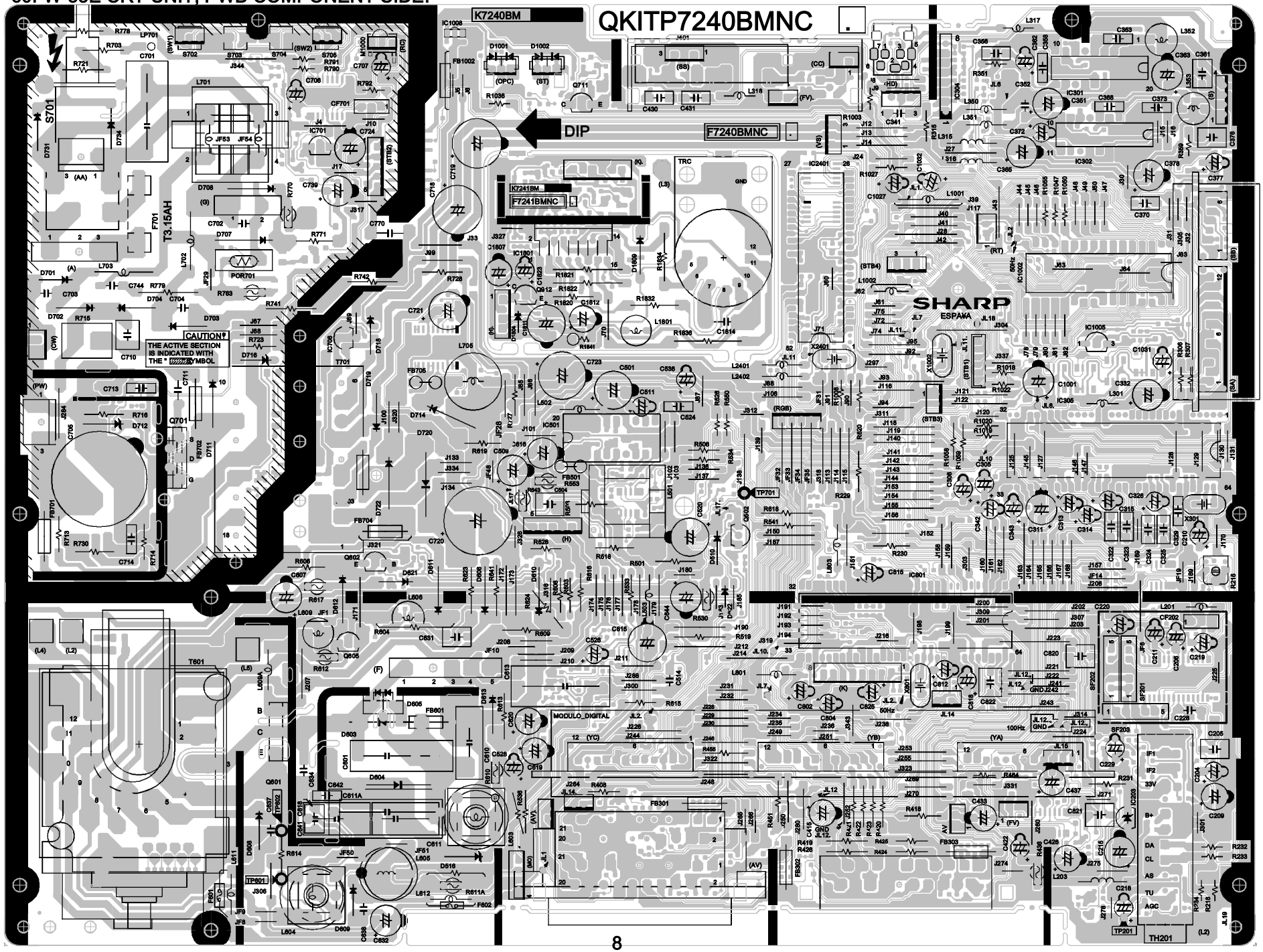
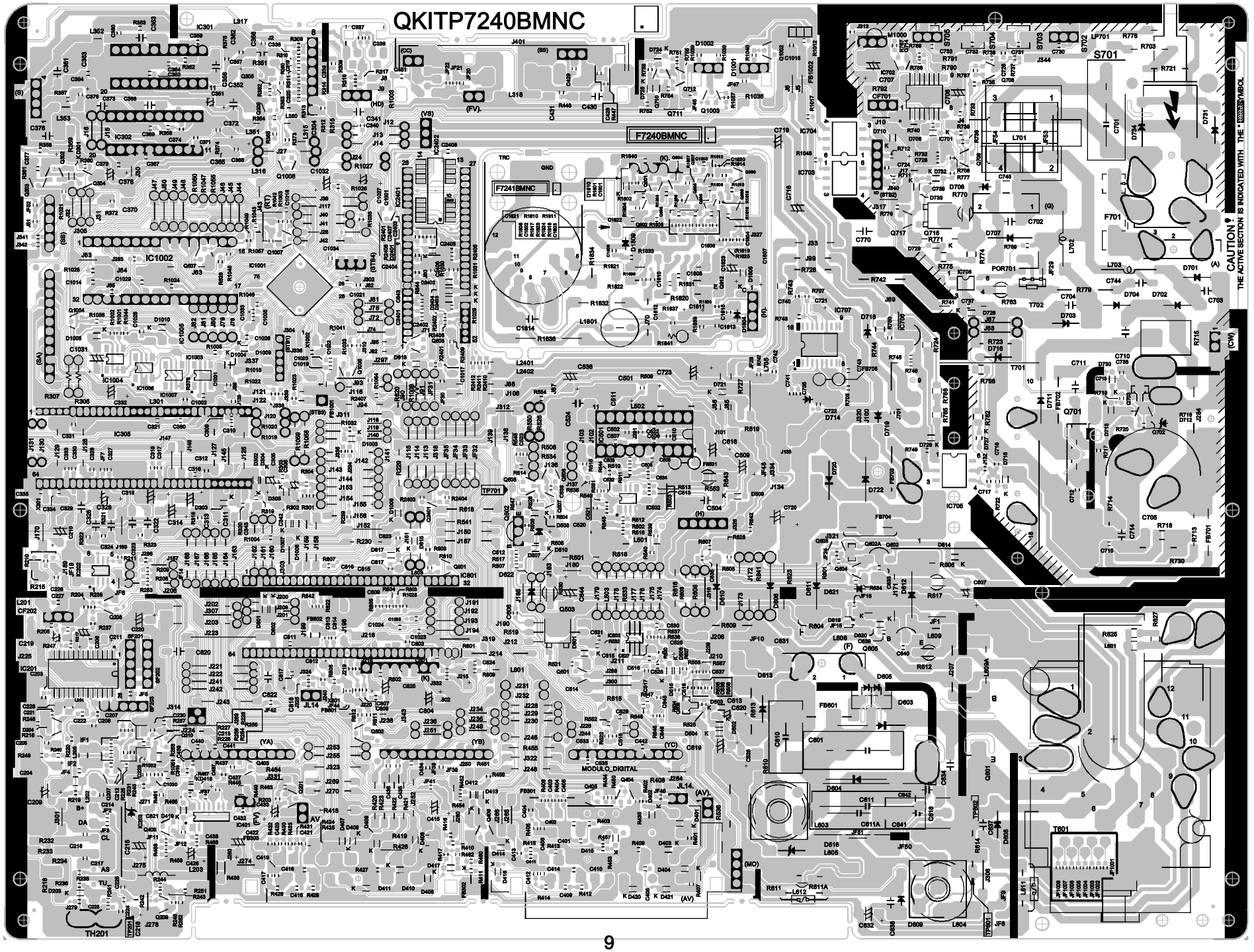


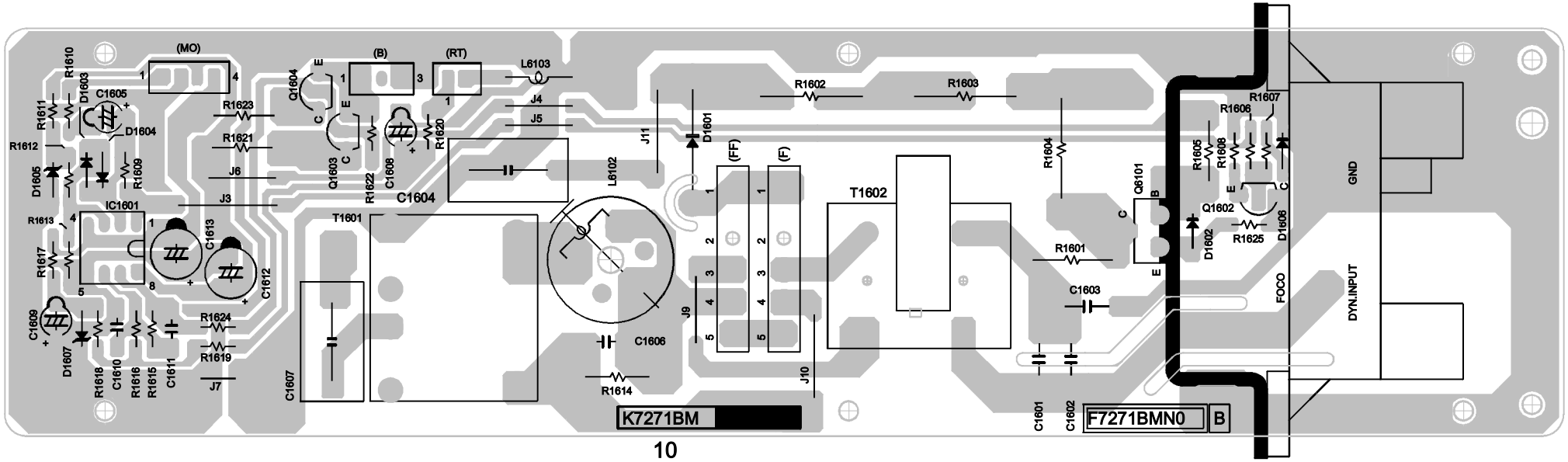
60 / 70 / 81FW-53E MOTHER UNIT PWB COMPONENT SIDE.
60FW-53E CRT UNIT, PWB COMPONENT SIDE.



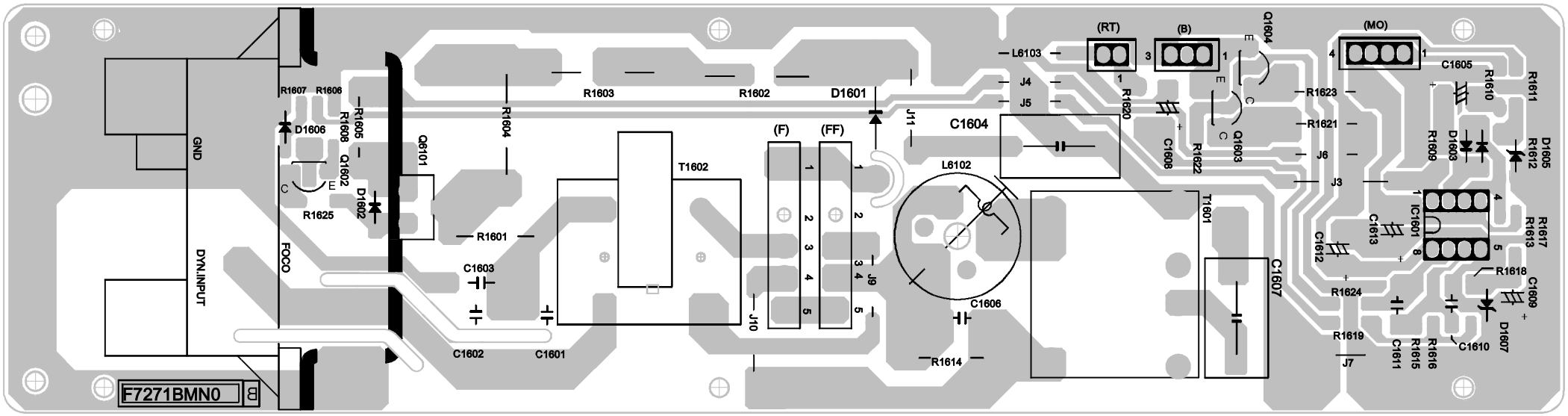
60 / 70 / 81FW-53E MOTHER UNIT PWB COPPER SIDE / 60FW-53E CRT UNIT, PWB COPPER SIDE.



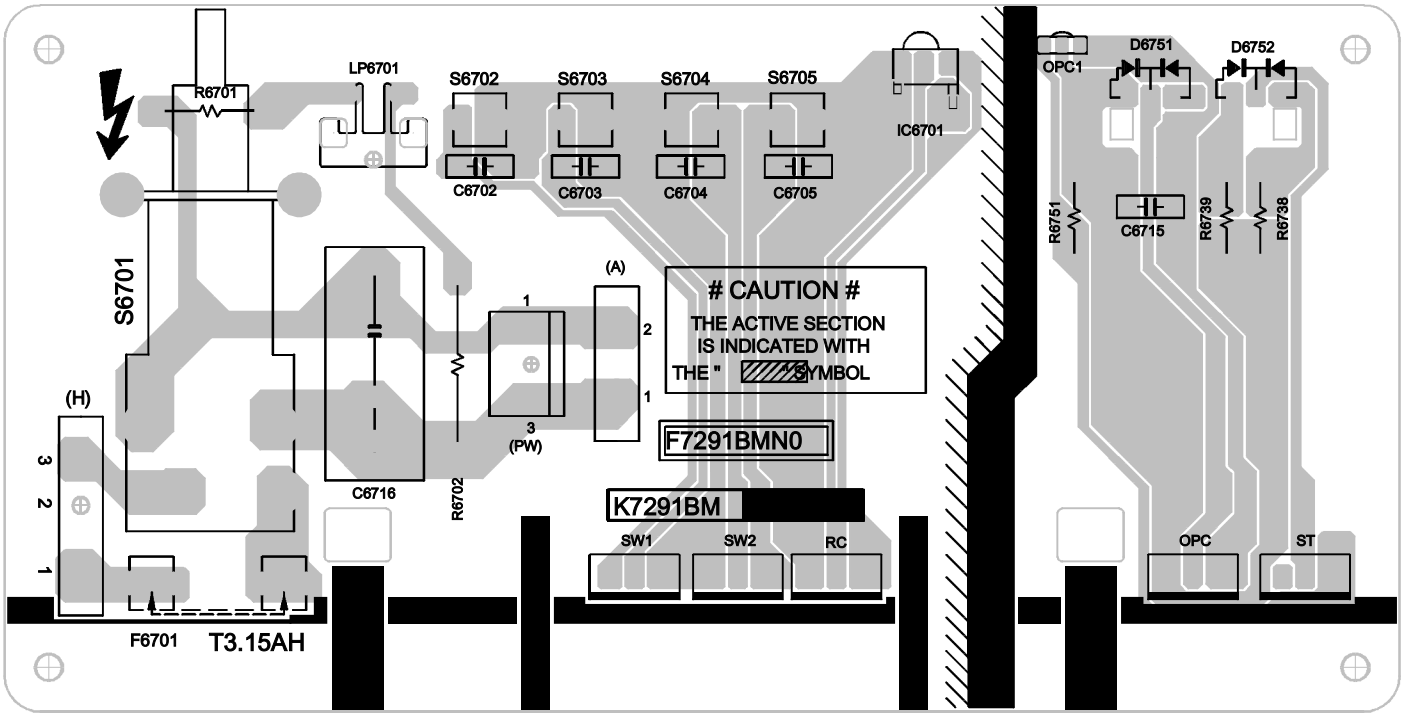
81FW-53E DINAMIC FOCUS UNIT, PWB COMPONENT SIDE.



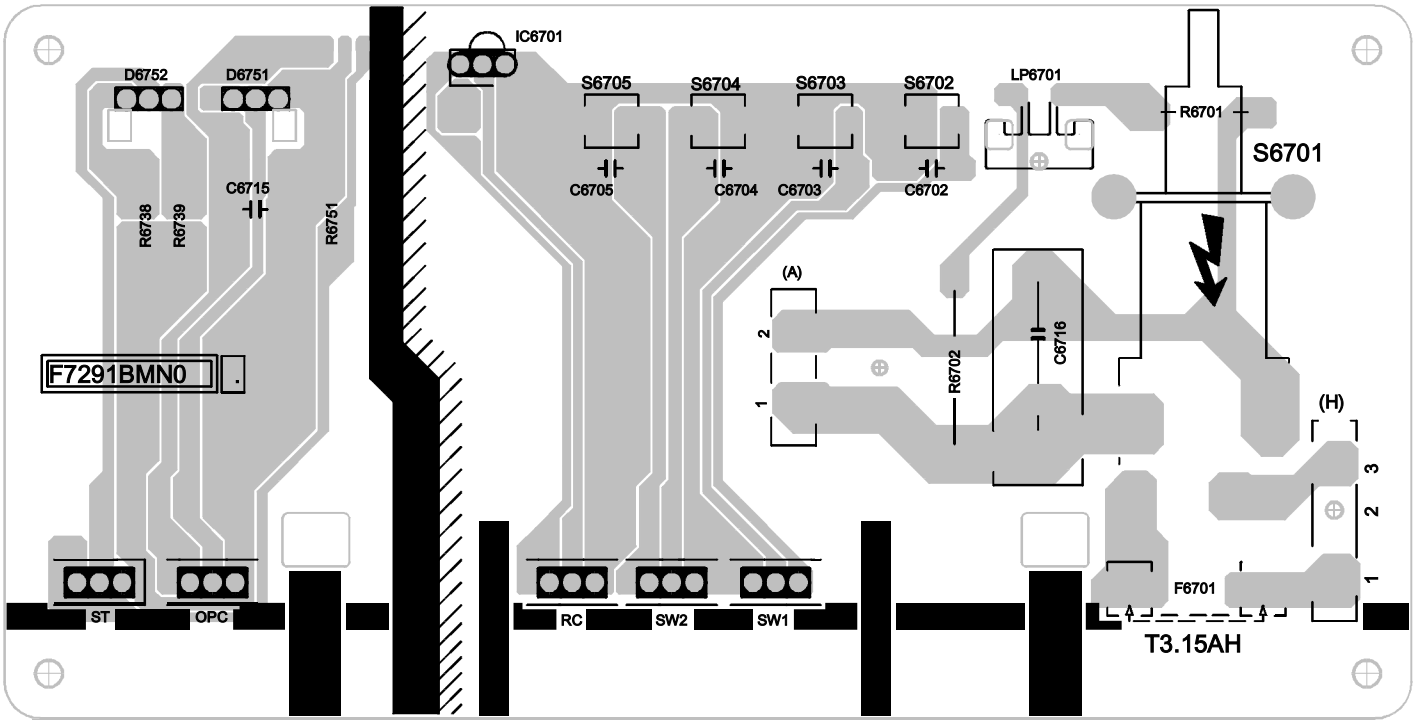
81FW-53E DINAMIC FOCUS UNIT PWB COPPER SIDE.



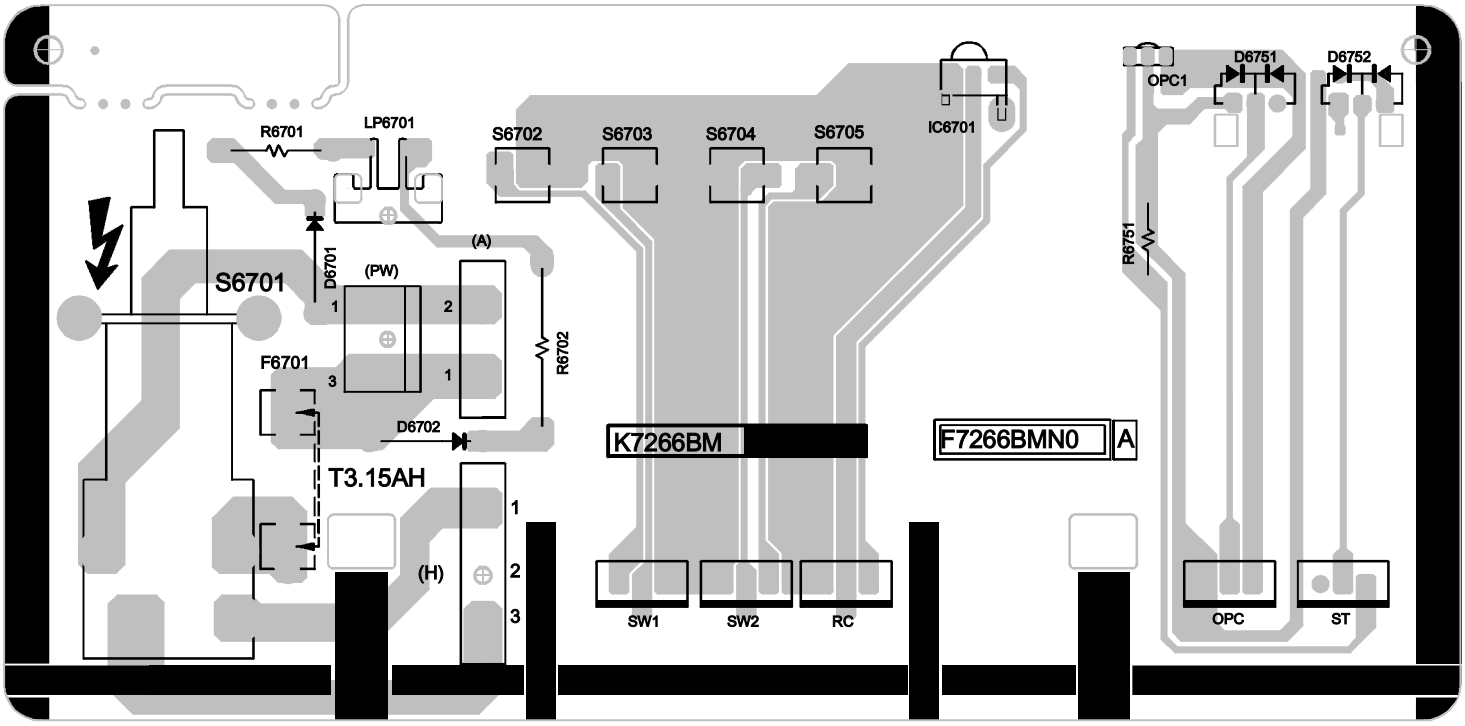
60FW-53E POWER UNIT, PWB COMPENT SIDE.



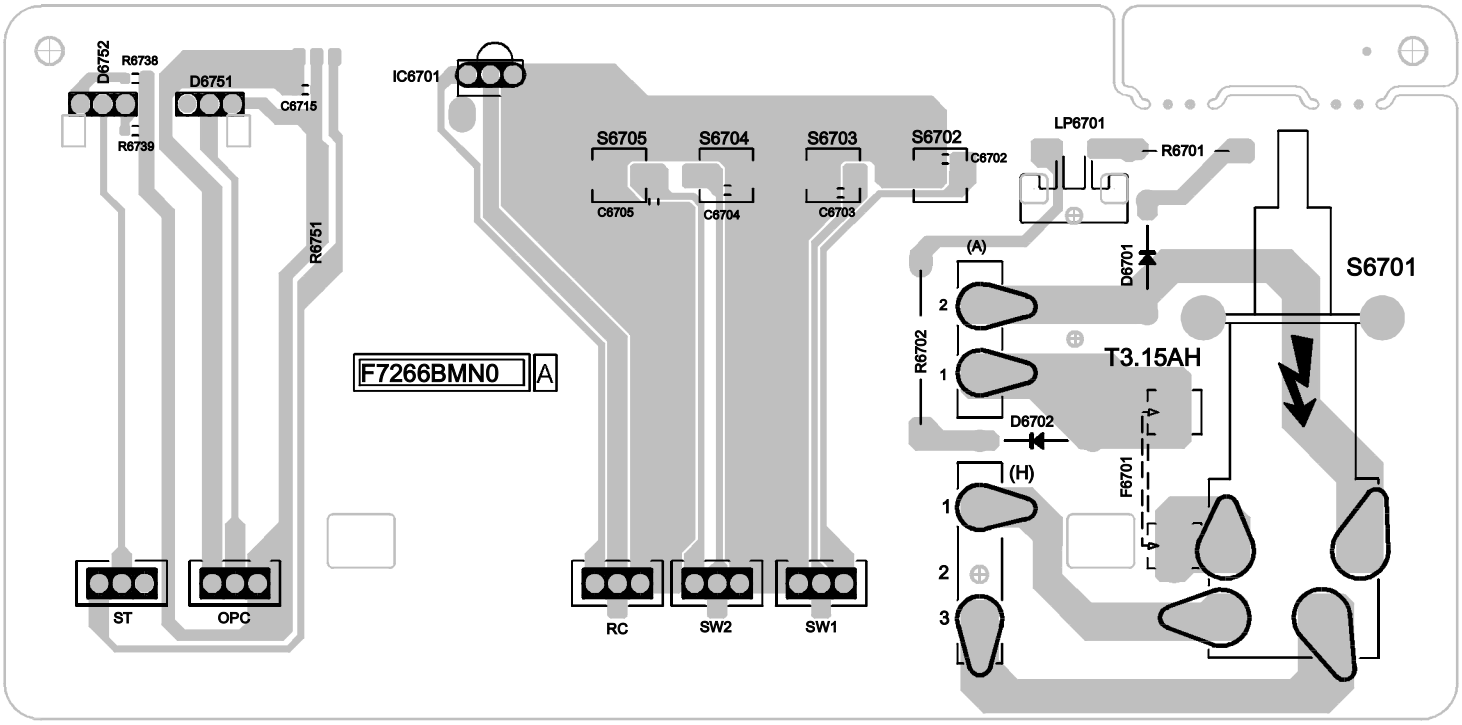
60FW-53E POWER UNIT, PWB COPPER SIDE.



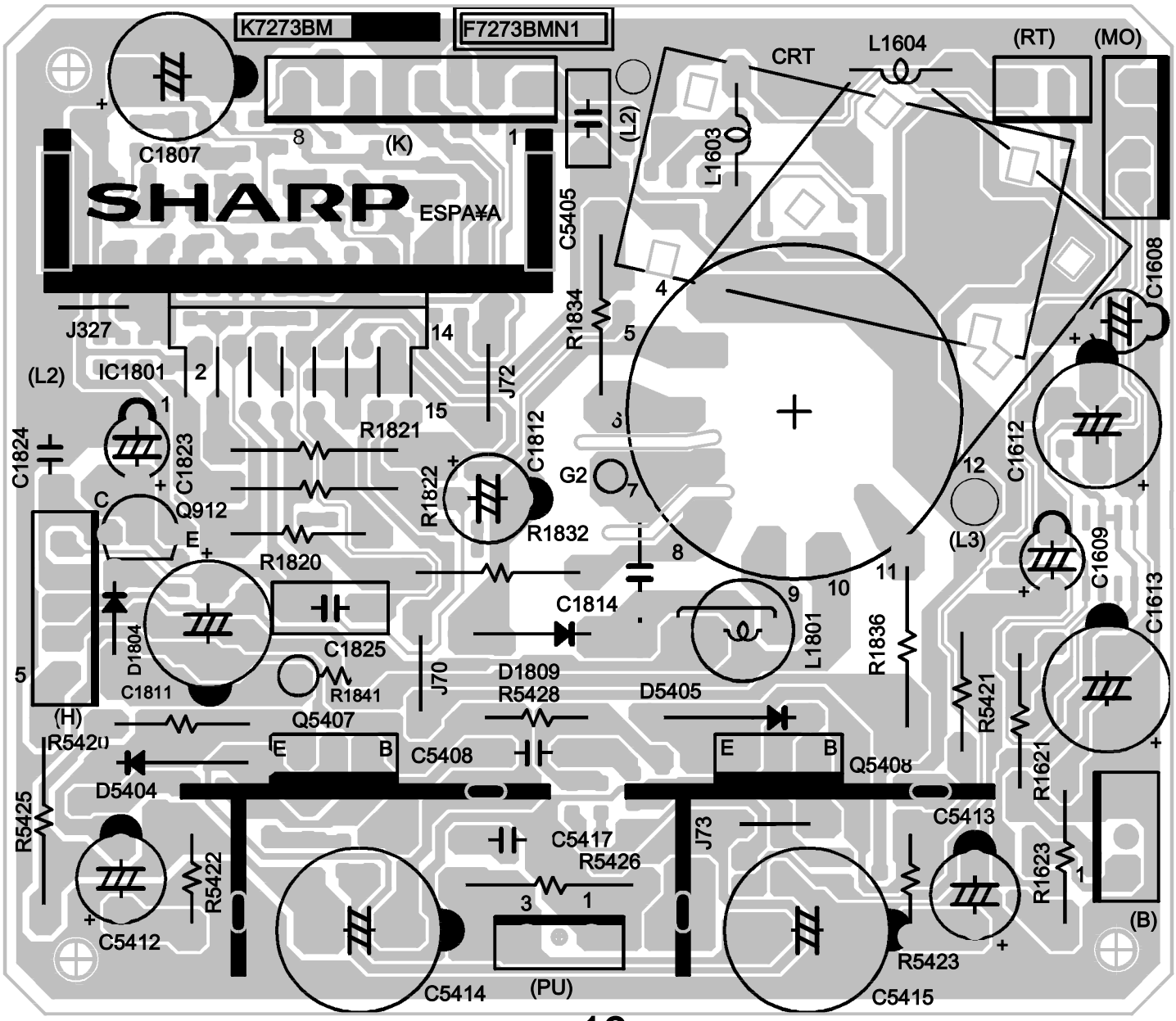
70 / 81FW-53E POWER UNIT PWB COMPONENT SIDE.



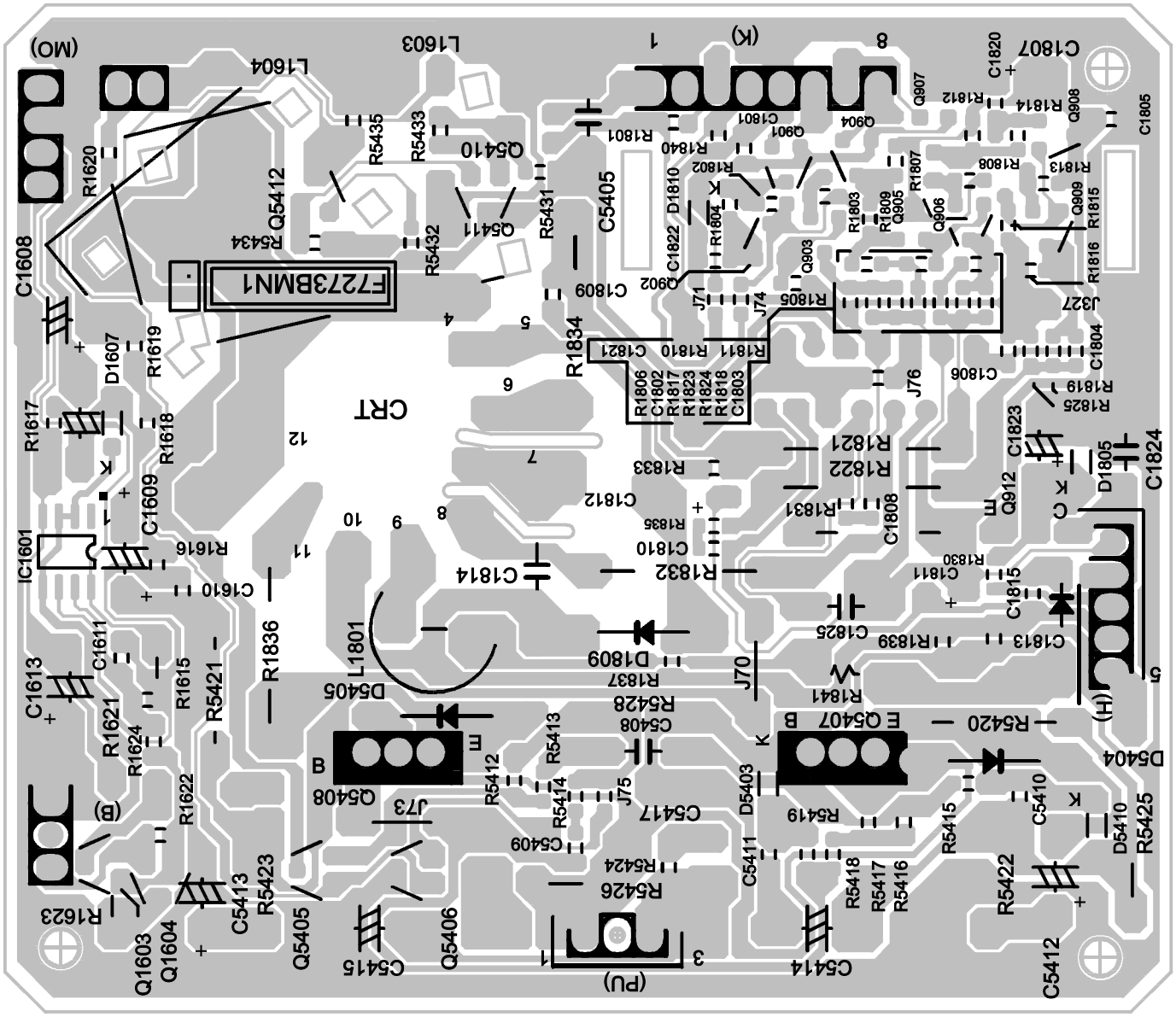
70 / 81FW-53E POWER UNIT PWB COPPER SIDE.



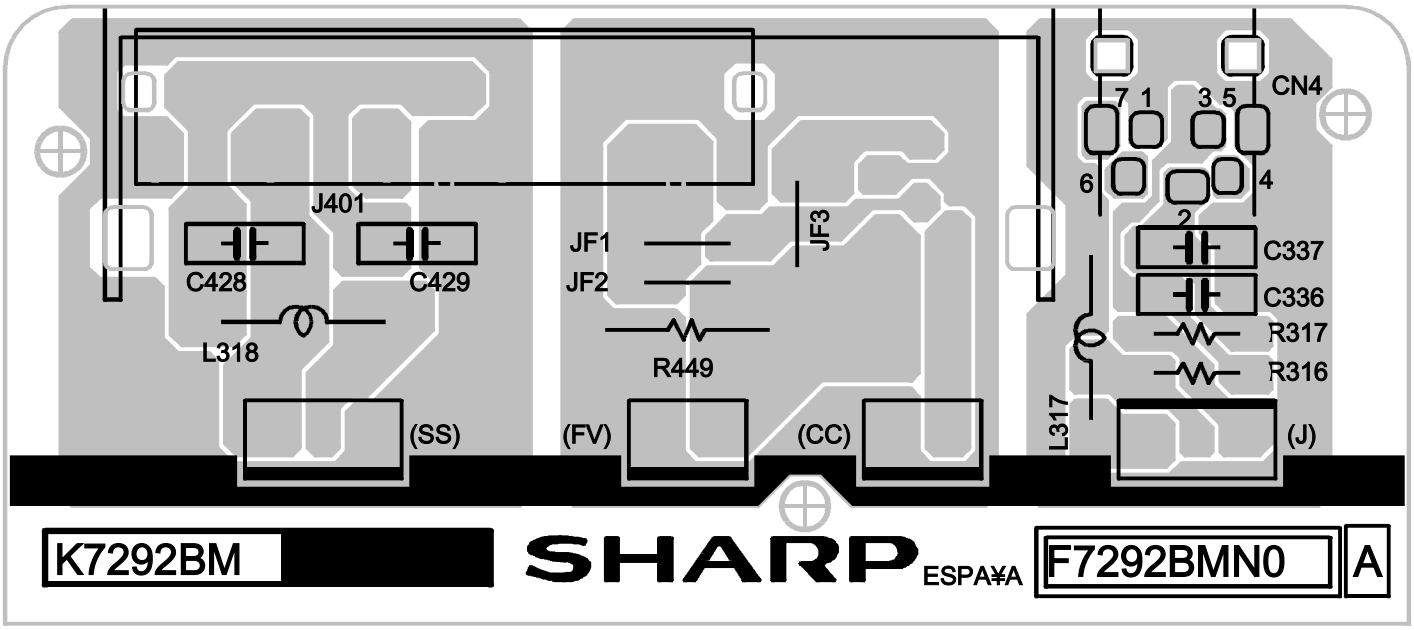
70 / 81FW-53E CRT UNIT PWB COMPONENT SIDE.



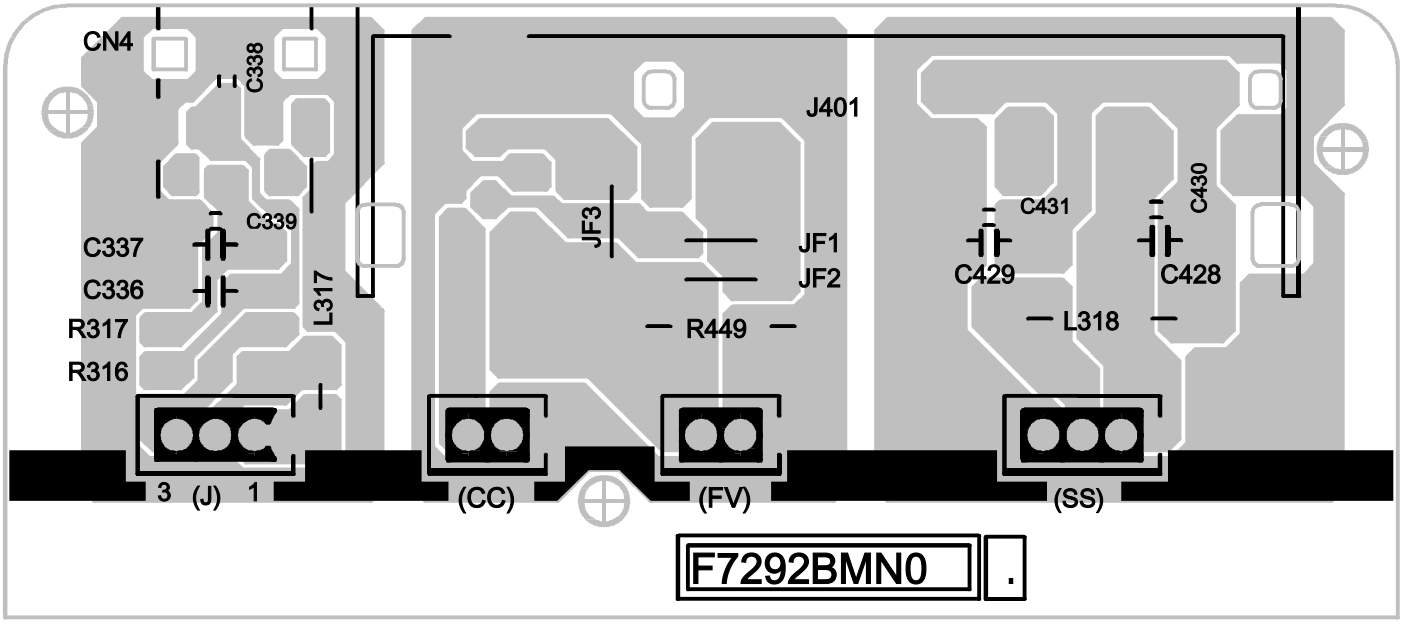
70 / 81FW-53E CRT UNIT PWB COPPER SIDE.



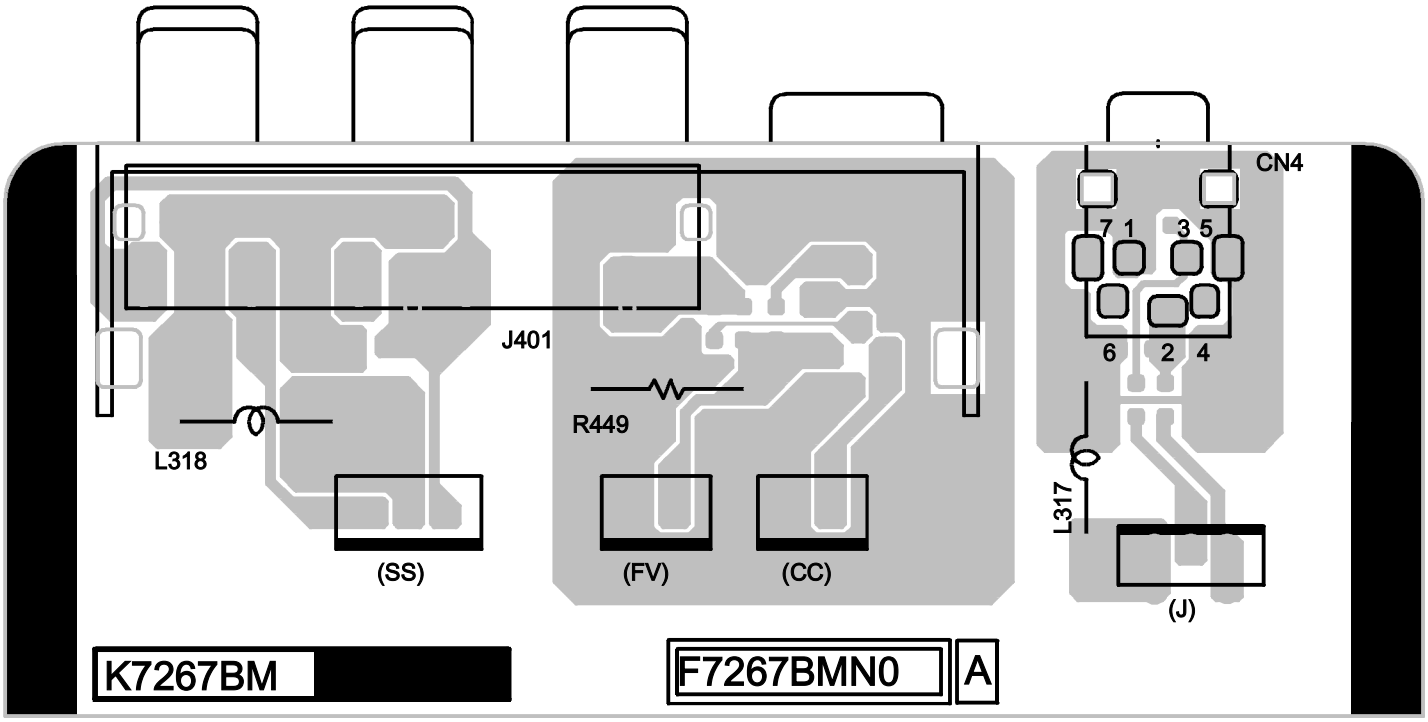
60FW-53E A/V UNIT, PWB COMPENT SIDE.



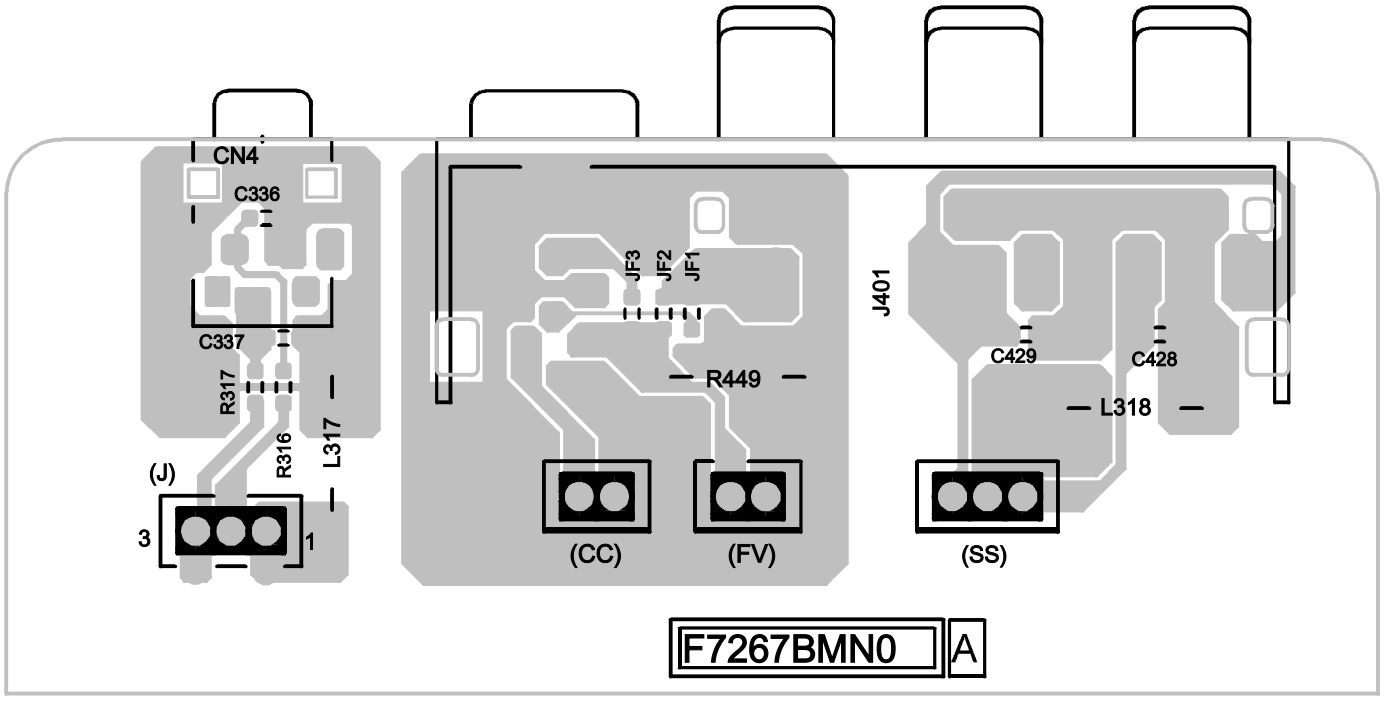
60FW-53 A/V UNIT, PWB COPPER SIDE.



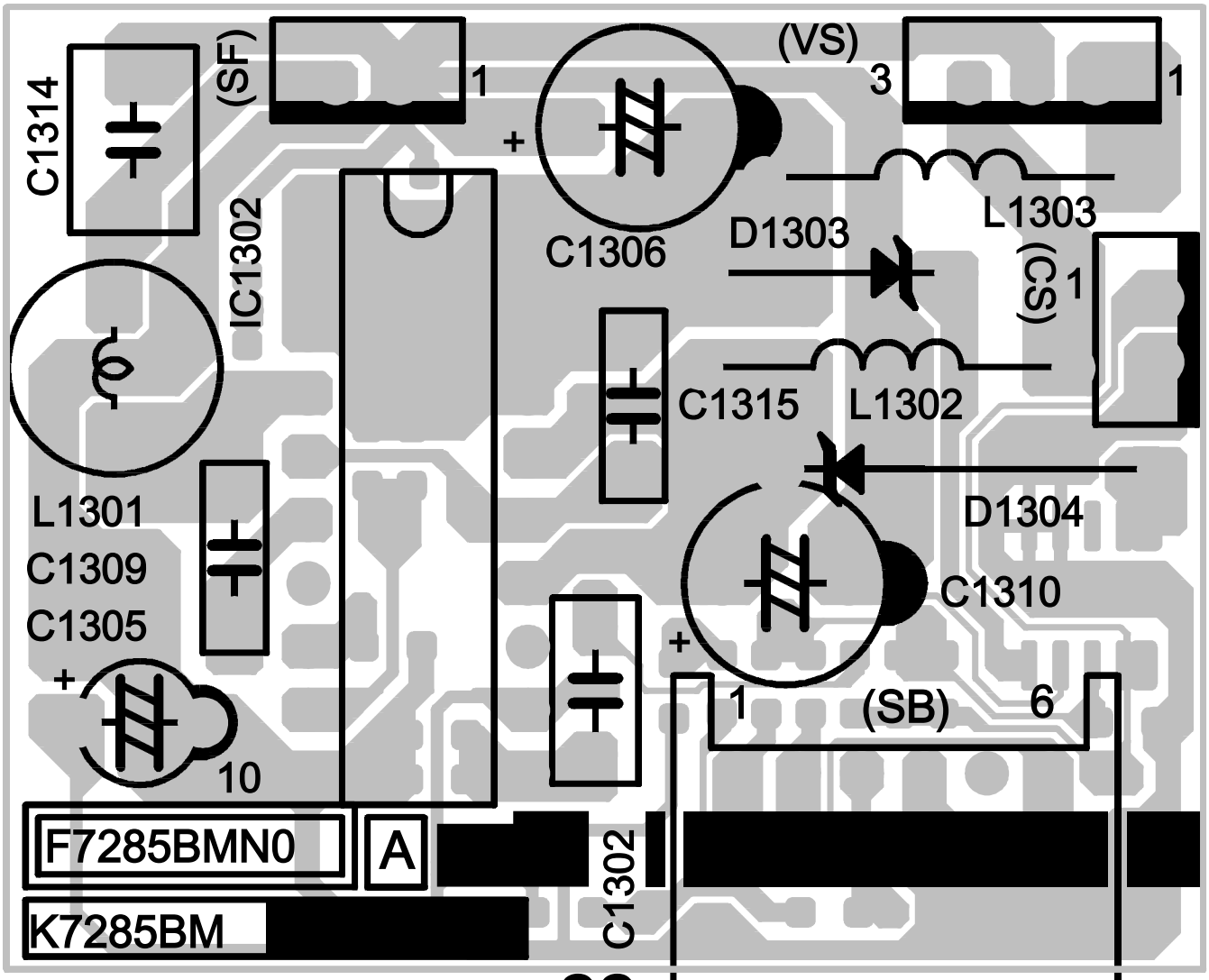
70 / 81FW-53E FRONT A/V UNIT PWB COMPONENT SIDE.



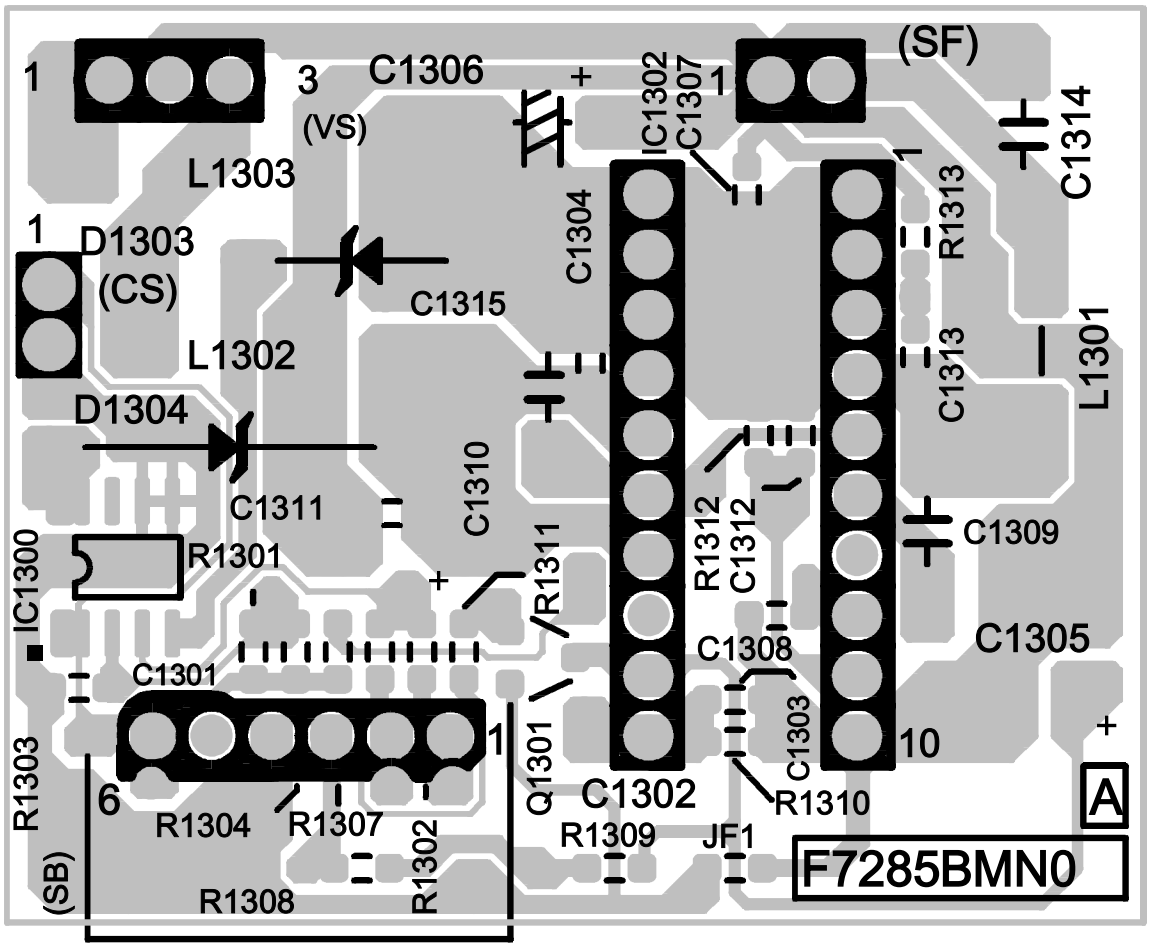
70 / 81FW-53E FRONT A/V UNIT PWB COPPER SIDE.



70 / 81FW-53E CENTRAL SPEAKER UNIT PWB COMPONENT SIDE.



70 / 81FW-53E CENTRAL SPEAKER UNIT PWB COPPER SIDE.



DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.

2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPOTANT SAFETY NOTE:

PARTS MARKED WITH « » ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

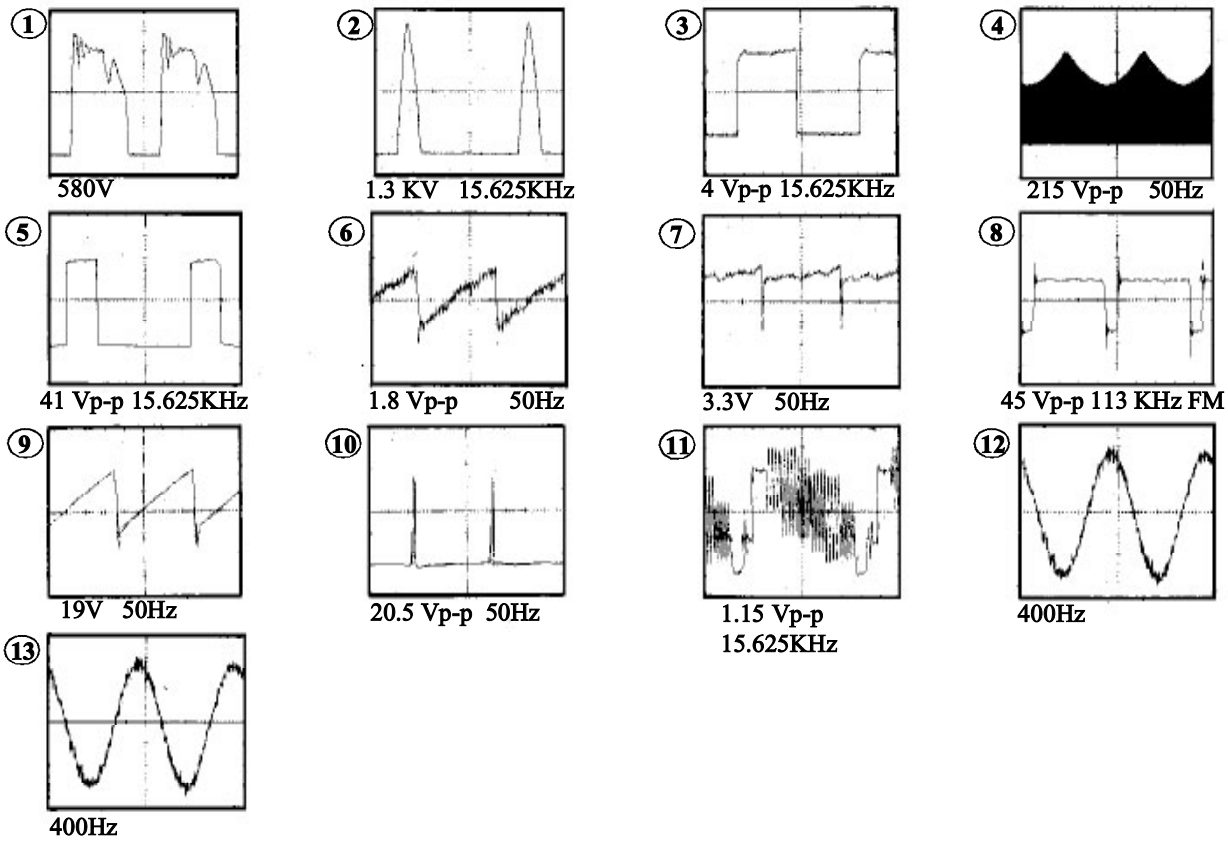
THE AREA ENCLOSED BY THIS LINE (–·–·–) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTE:

1. The unit of resistance «ohm»is omitted (K=1000 ohms. M= Megaohm).
2. All resistors are 1/8 watt. unless otherwise noted.
3. All capacitors are µF, unless otherwise noted (P= µµF).
4. The capacitor with Part No. RC-FZ9XXXBMNJ is designed to with stand 63V.

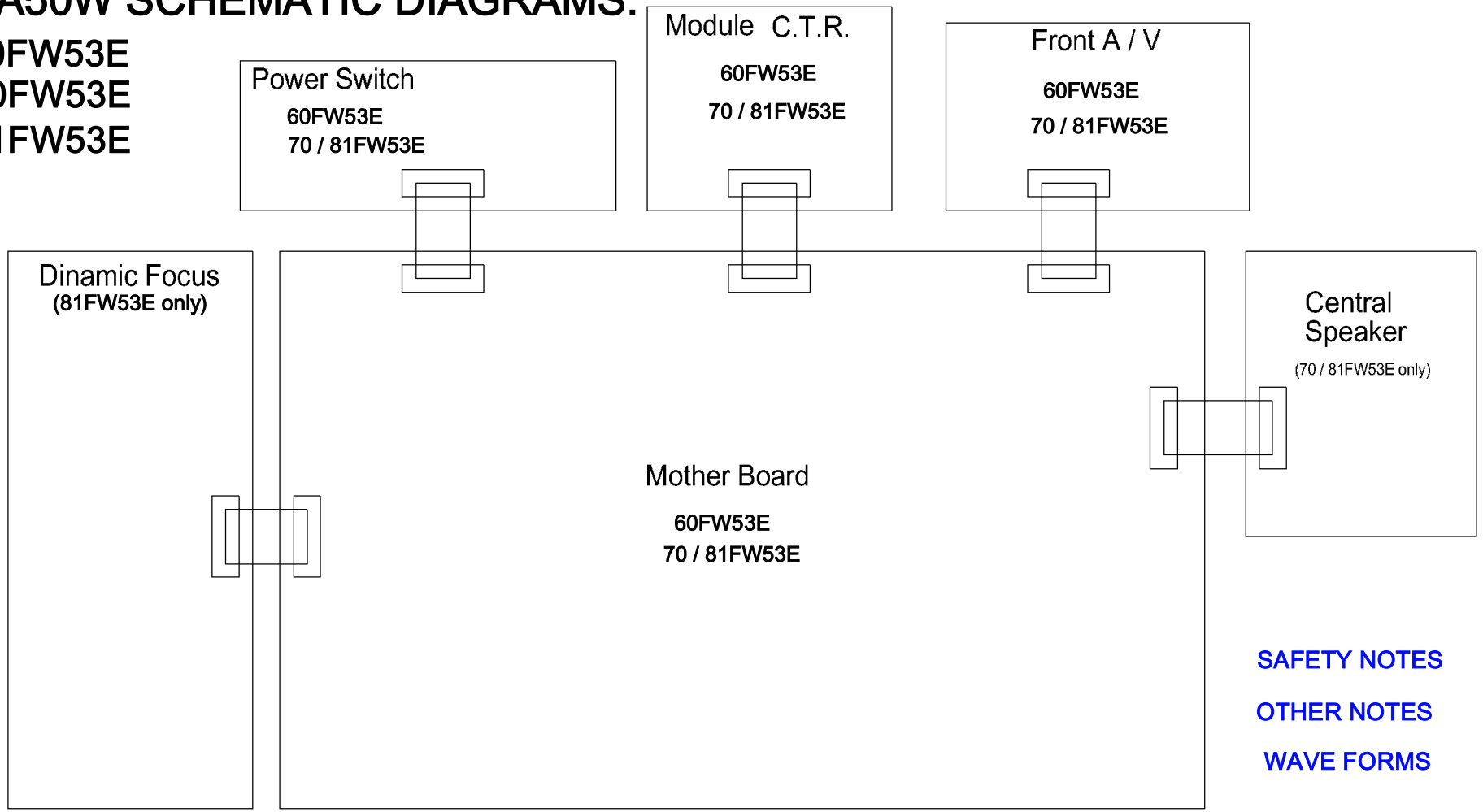
CAUTION
This circuit diagram is original one, therefore there may be light difference from yours.

WAVEFORM MEASUREMENT CONDITION:
Colour bar genetator signal of 70 dB from RF input.



DA50W SCHEMATIC DIAGRAMS.

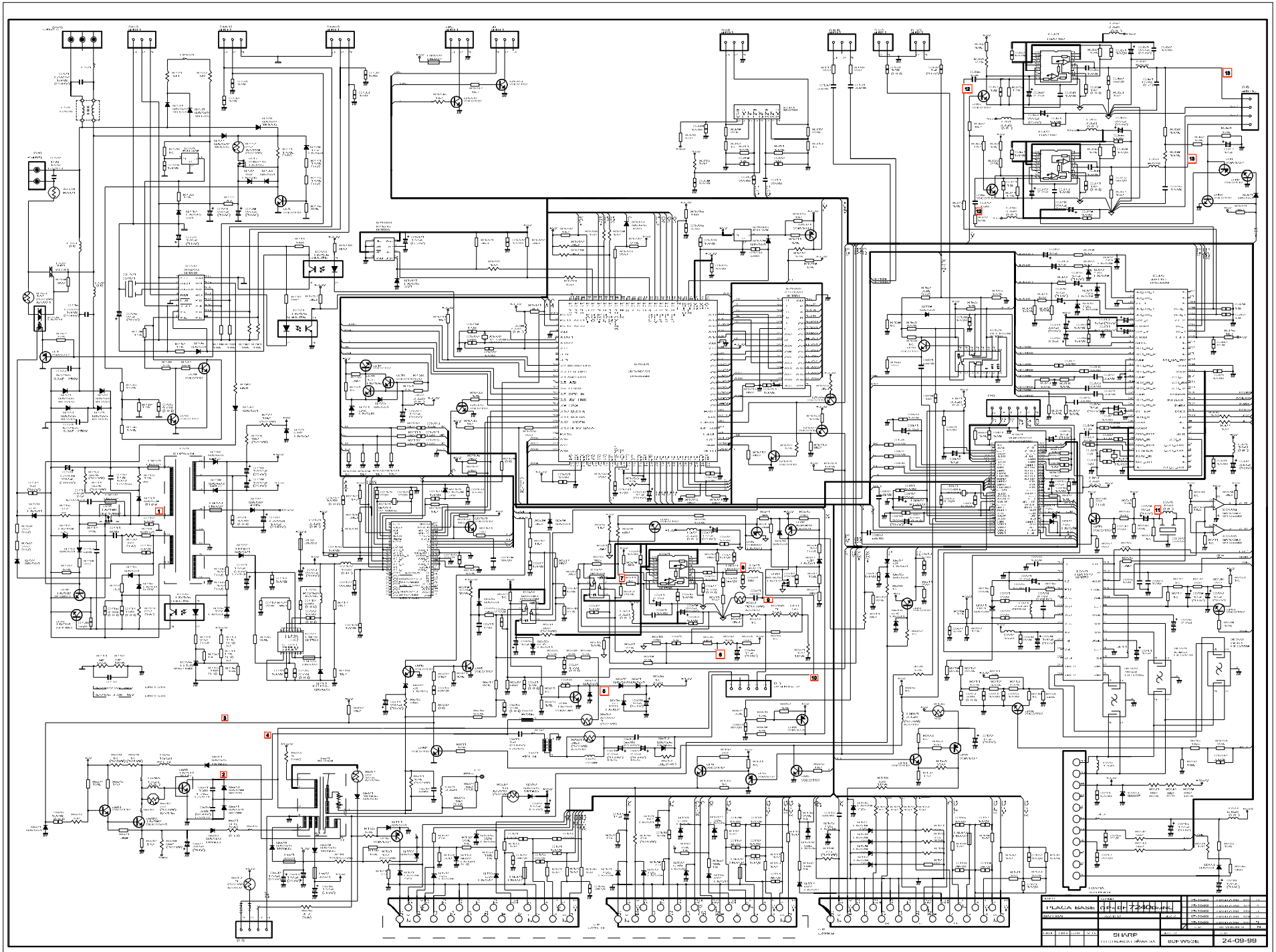
60FW53E
70FW53E
81FW53E



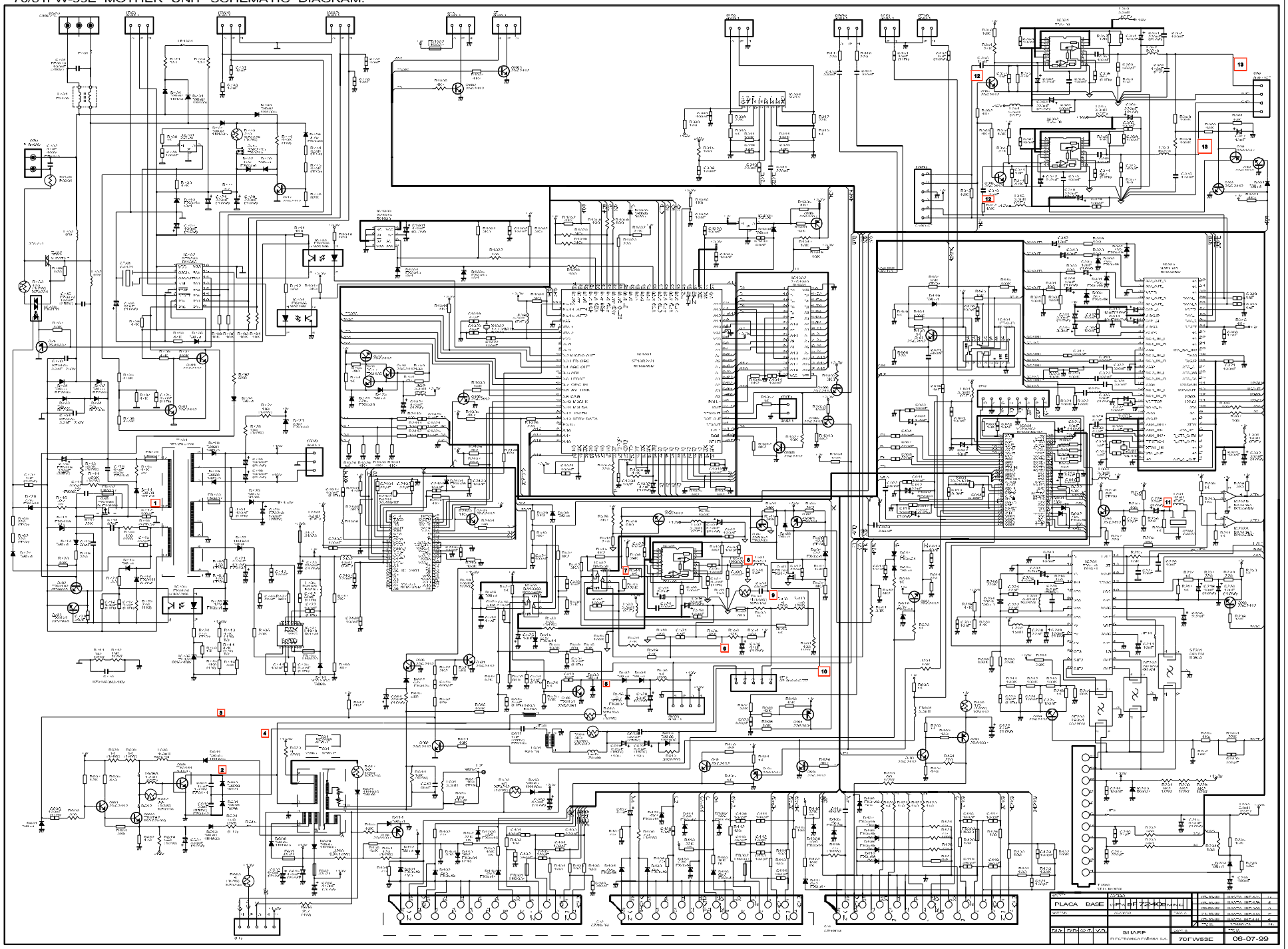
SAFETY NOTES

OTHER NOTES

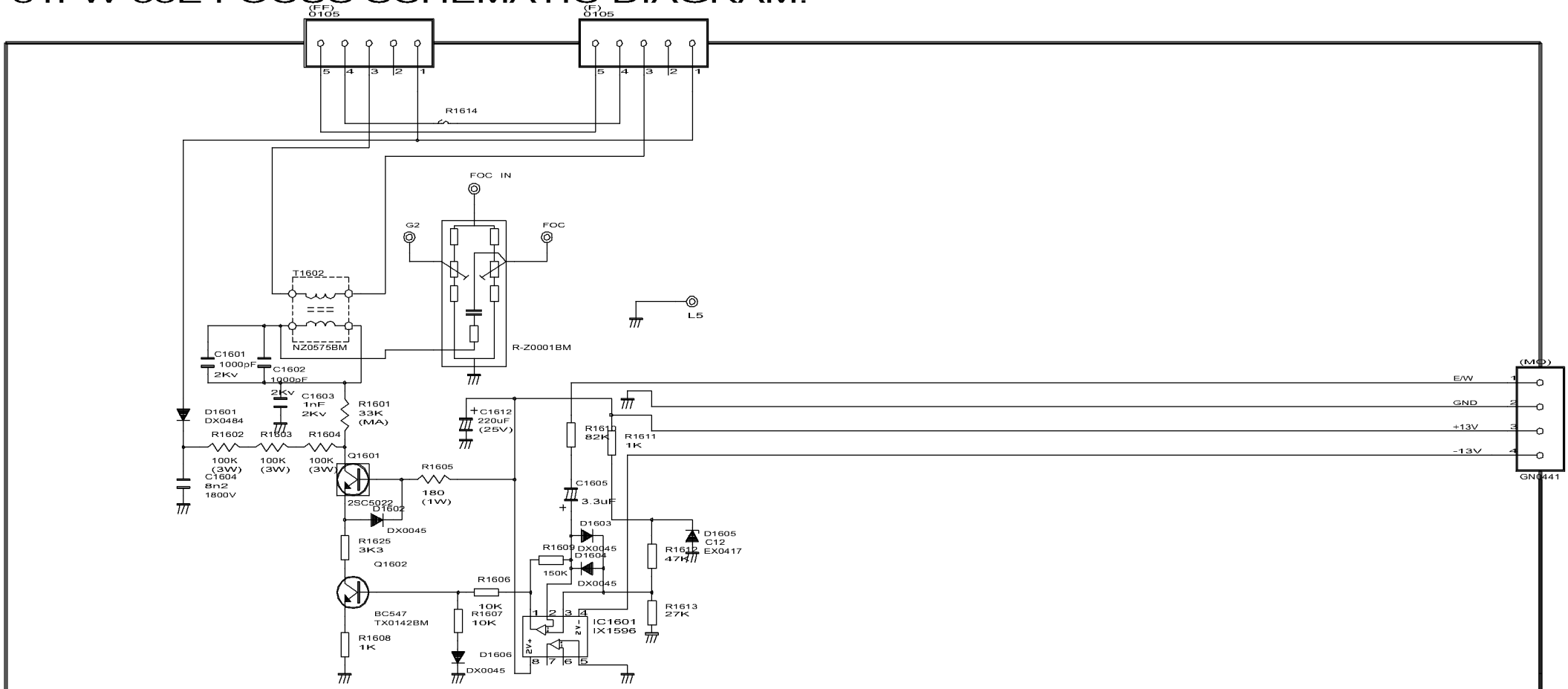
WAVE FORMS


PLACA BASE
SHARP
24-09-99

70/81FW-53E MOTHER UNIT SCHEMATIC DIAGRAM.

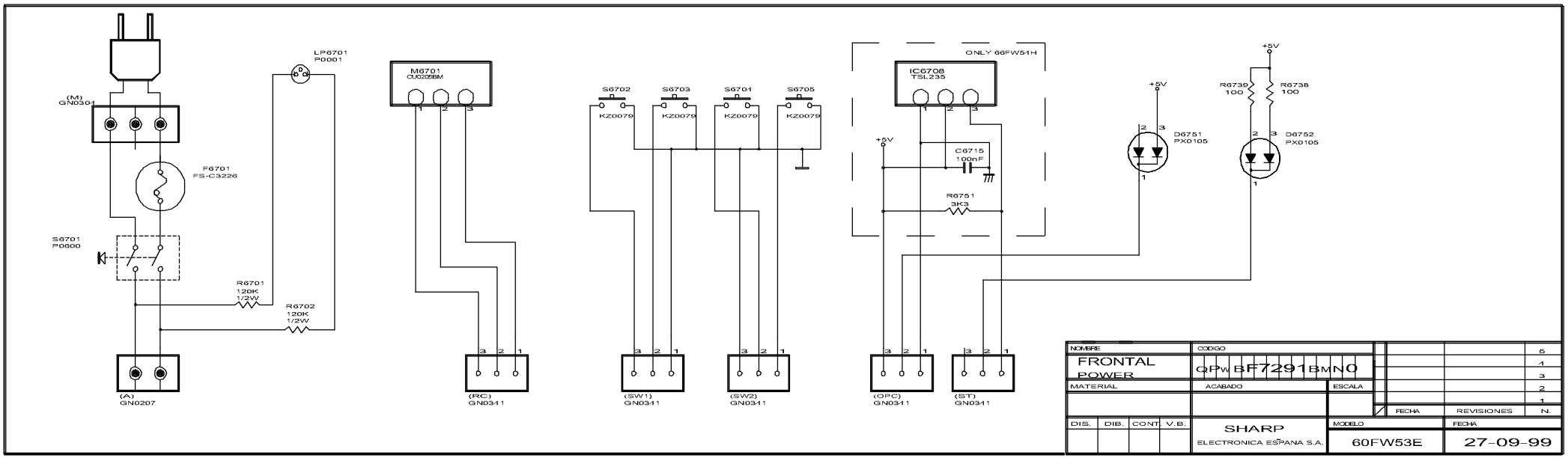


81FW-53E FOCUS SCHEMATIC DIAGRAM.

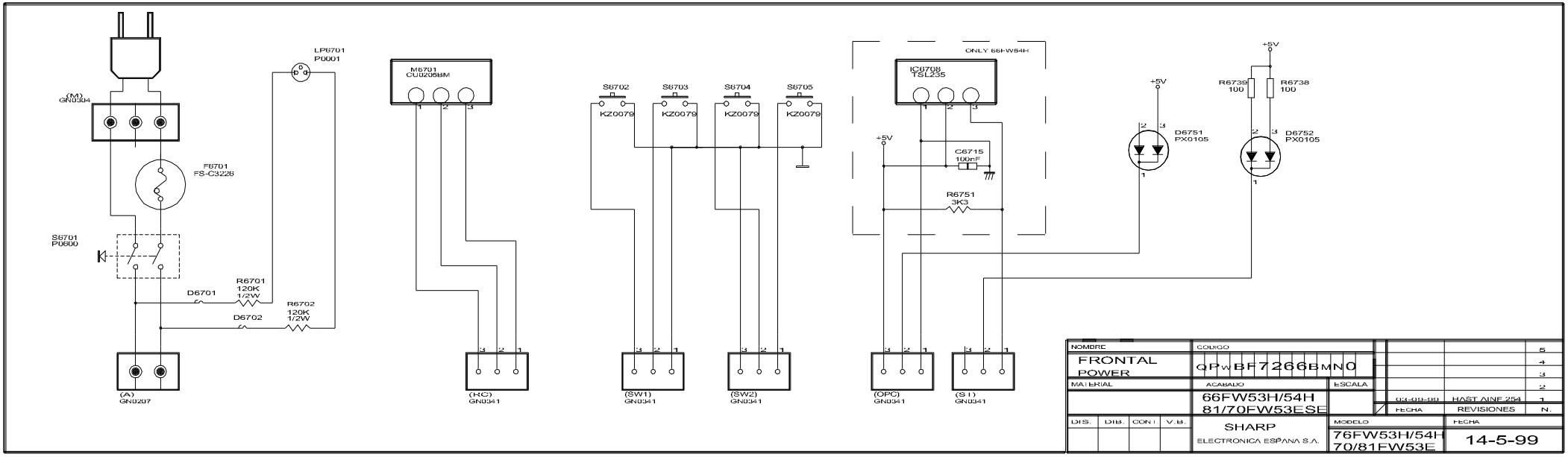


NOMBRE	CODIGO			
PLACA FOCO	QPW BF7271BMV2			
MATERIAL	ACABADO	ESCALA		
			28-09-99	HASTA INF. 386
			FECHA	REVISIONES N.
DIS. DIB. CONT. V.B.	SHARP ELECTRONICA ESPAÑA S.A.	MODELO	FECHA	
		76FW53/54H 81FW53E/SE	12-07-99	

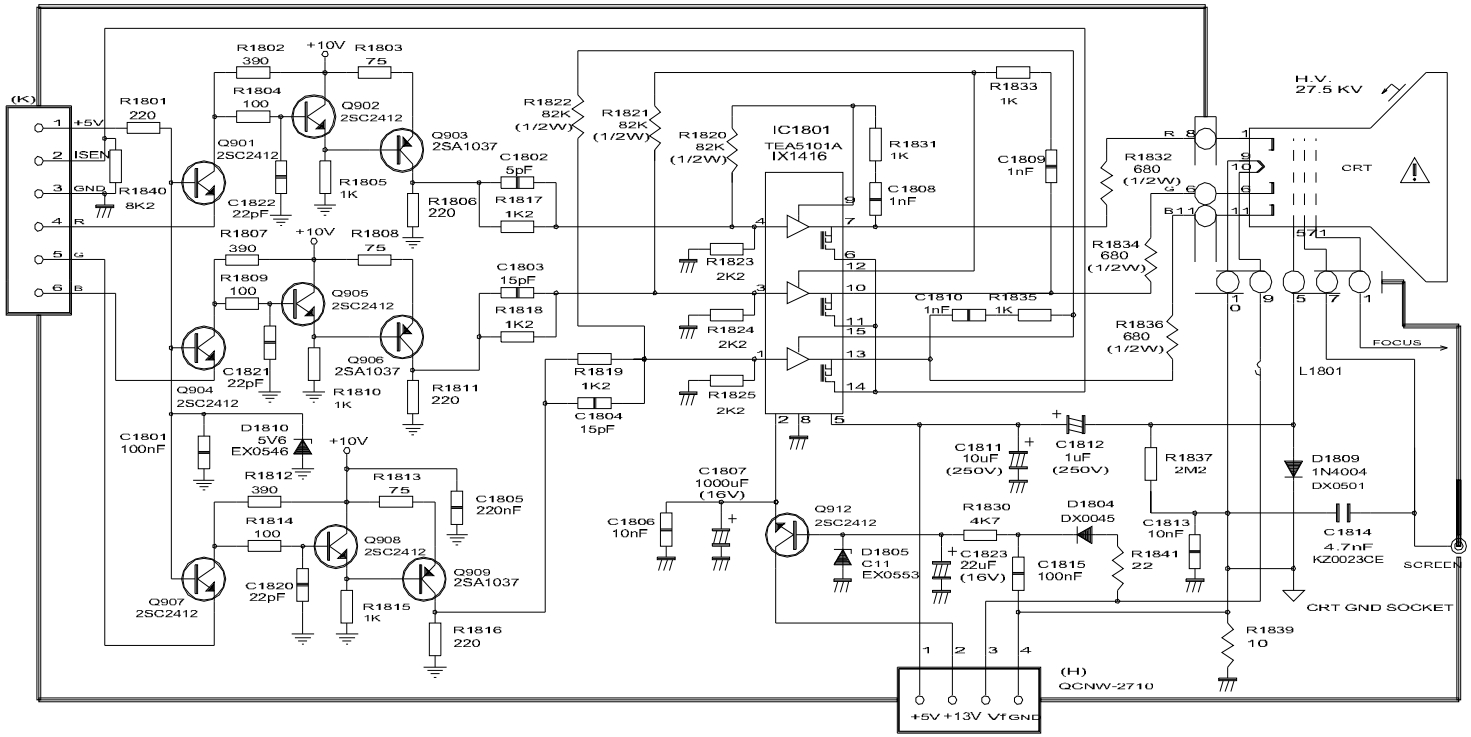
60FW-53E POWER SCHEMATIC DIAGRAM.



70/81FW-53E FRONTAL POWER SCHEMATIC DIAGRAM.

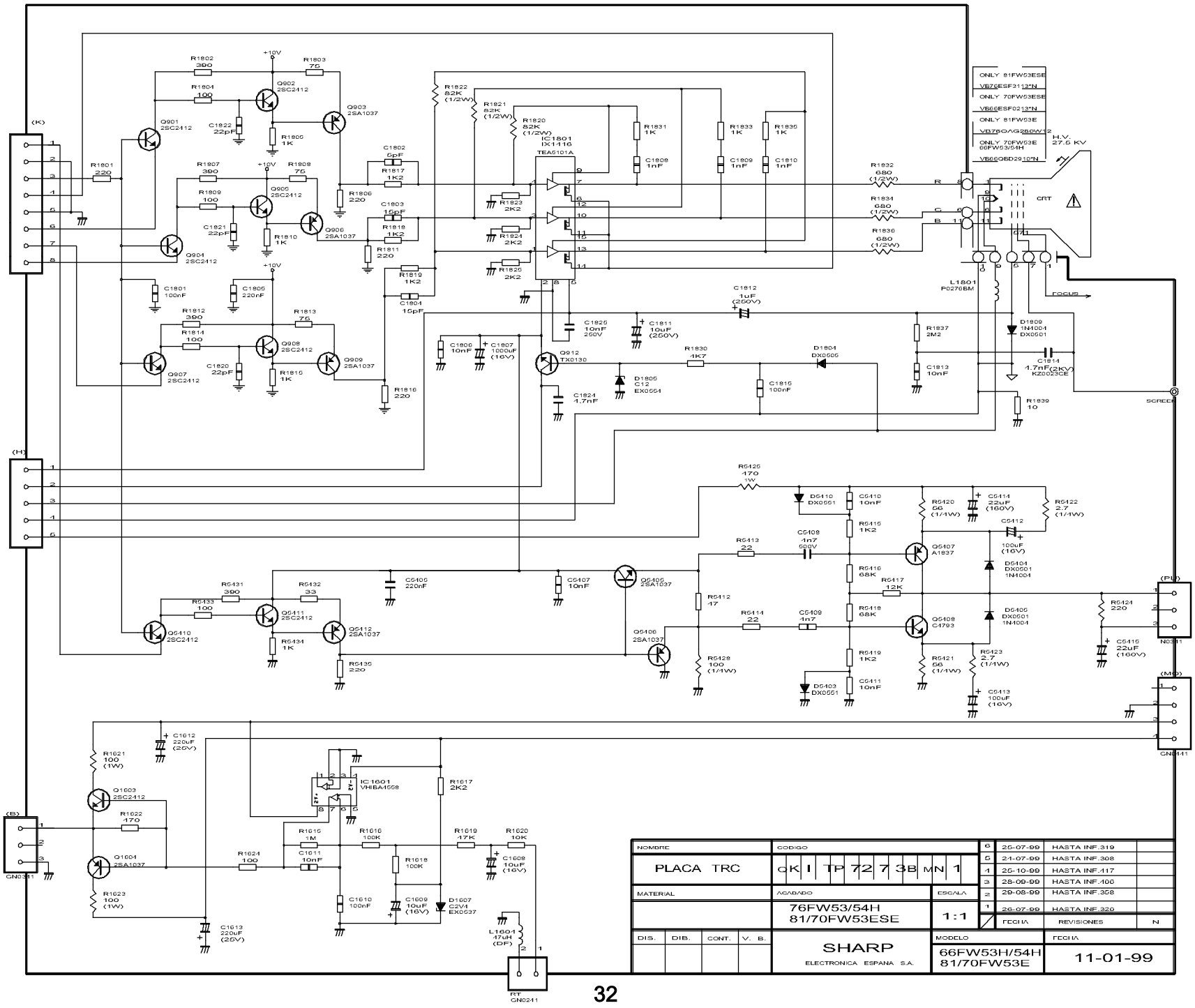


60FW-53E CRT SCHEMATIC DIAGRAM.



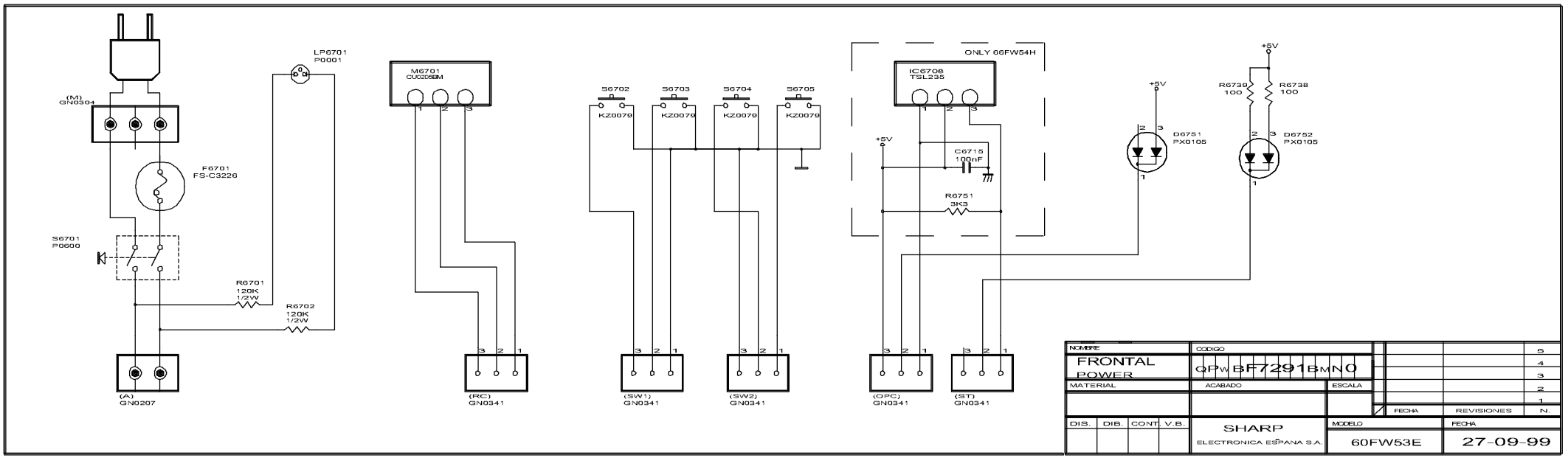
NOMBRE				CODIGO				
PLACA TRC				QPWBF7241BMN0				
MATERIAL				ACABADO		ESCALA		
							FECHA	REVISIONES N.
DIS.	DIB.	CONT.	V.B.	SHARP ELECTRONICA ESPANA S.A.		MODELO	FECHA	
						60FW53E	27-09-99	

70/81FW-53E CRT SCHEMATIC DIAGRAM.

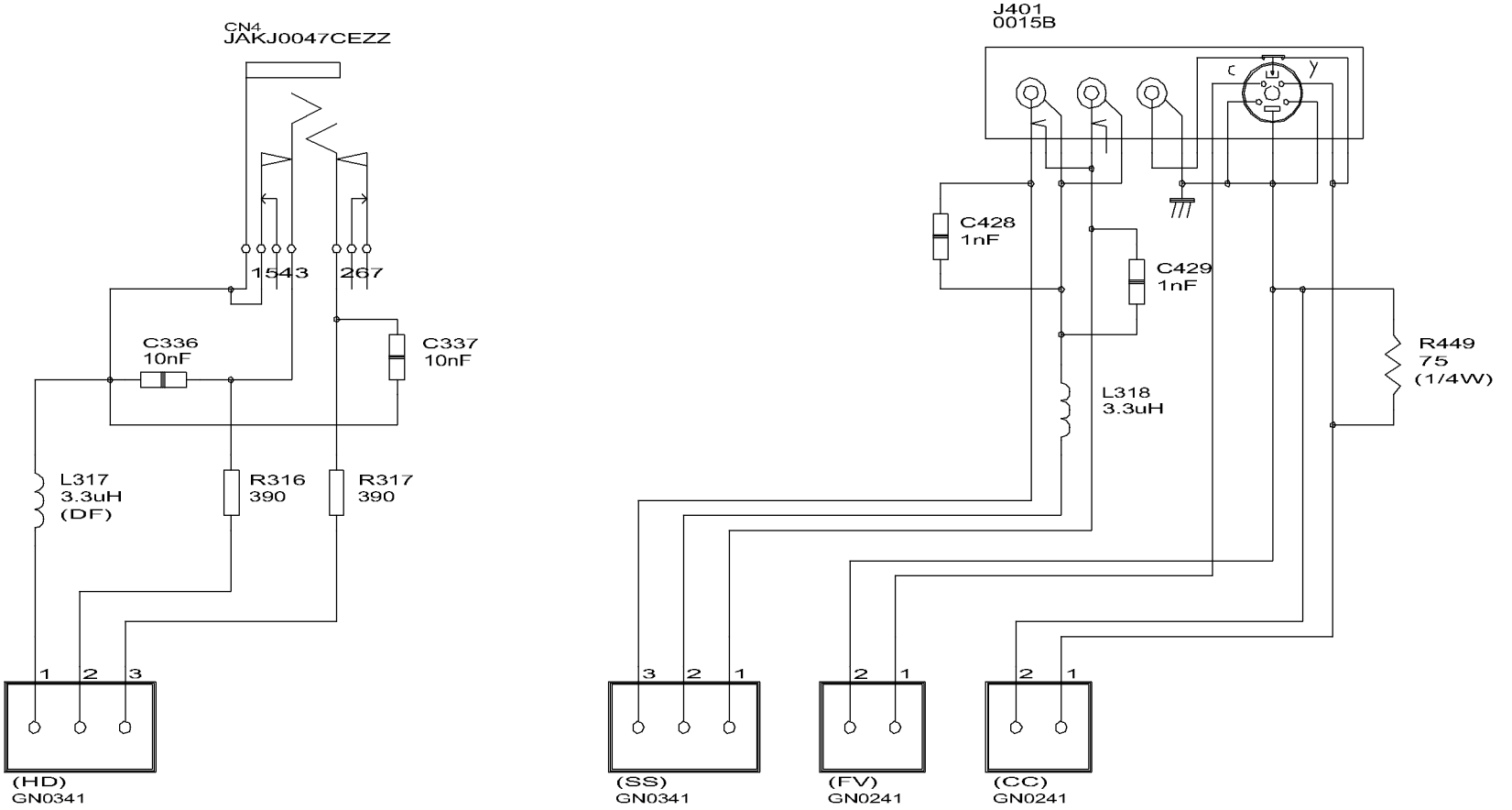


NOMBRE	CODIGO					
PLACA TRC	GK I TP 72 7 3B MN 1	6	25-07-99	HASTA INF.319		
		5	21-07-99	HASTA INF.308		
MATERIAL	ACABADO / ESCALA	4	25-10-99	HASTA INF.417		
	76FW53/54H 81/70FW53ESE / 1:1	3	28-09-99	HASTA INF.400		
		2	25-08-99	HASTA INF.308		
		1	25-07-99	HASTA INF.320		
		/	FECHA	REVISIONES	N	
DIS. / DIB. / CONT. / V. B.	SHARP ELECTRONICA ESPANA S.A.	MODELO	66FW53H/54H 81/70FW53E	FECHA	11-01-99	

60FW-53E FRONT SIGNAL SCHEMATIC DIAGRAM.

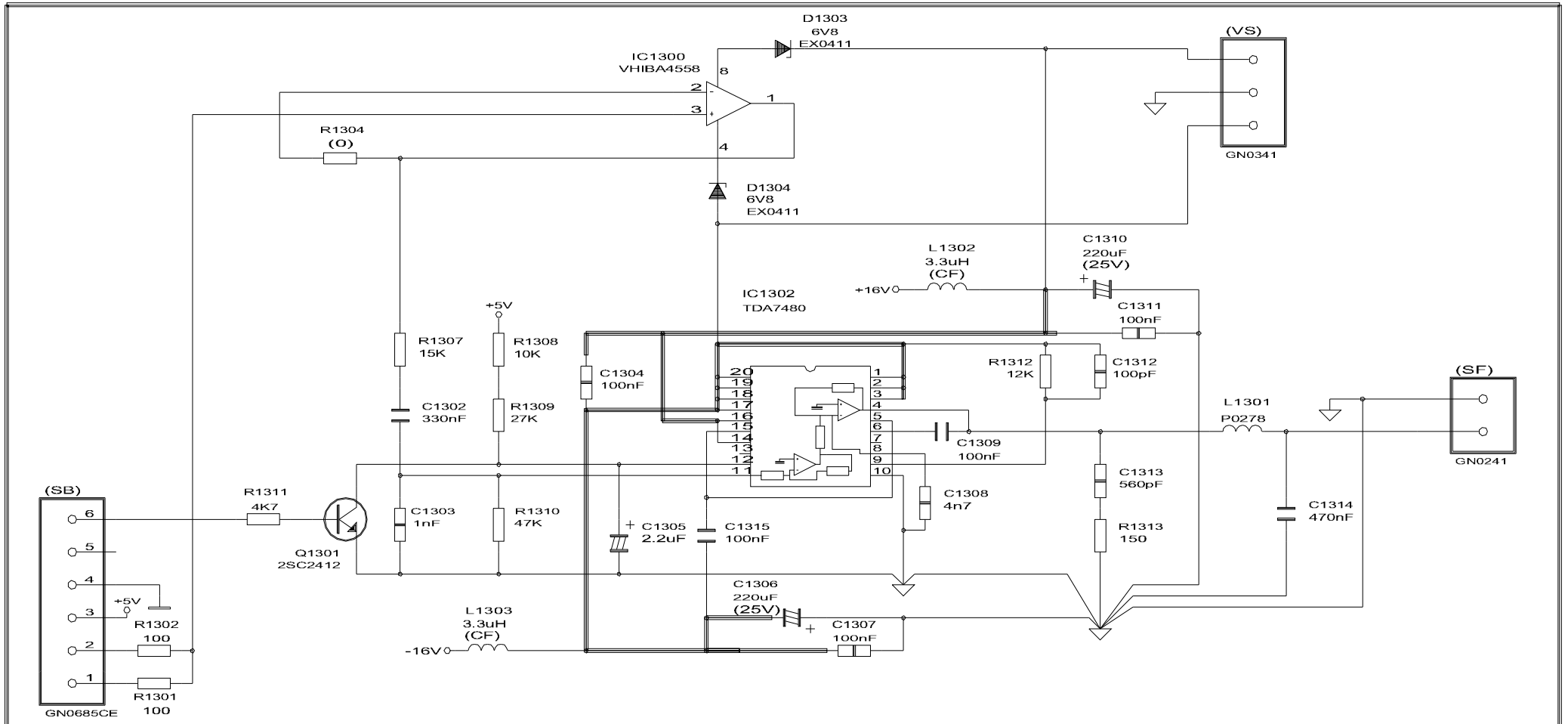


70/81FW-53E FRONTAL SIGNAL SCHEM. DIAGR.



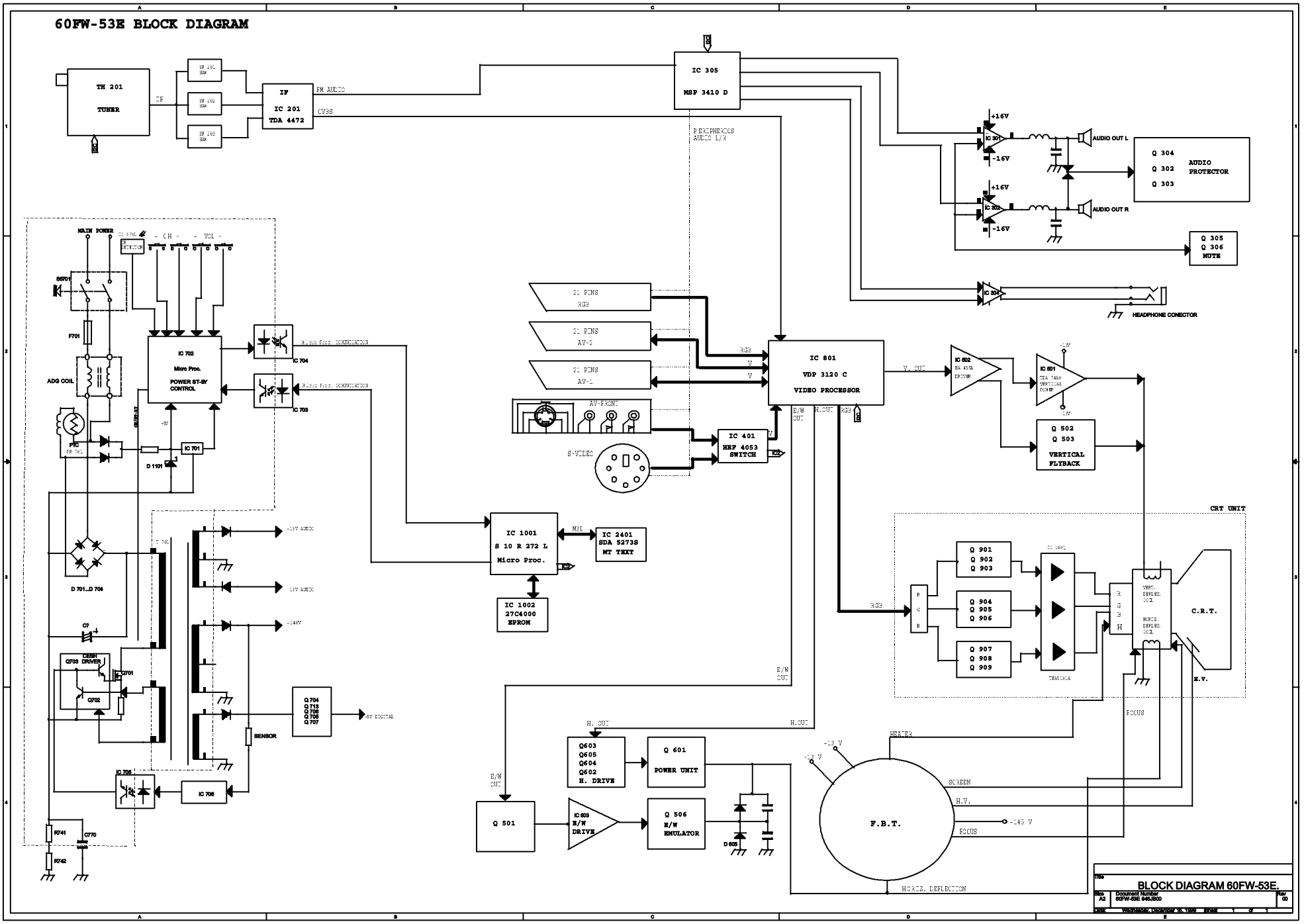
NOMBRE	CODIGO					
FRONTAL SIGNAL	QPWBF7267BMN0					5
						4
						3
MATERIAL	ACABADO	ESCALA				2
	81FW53E/SE			FECHA	REVISIONES	1 N.
DIS. DIB. CONT. V.B.	SHARP	MODELO		FECHA		
	ELECTRONICA ESPAÑA S.A.	66FW53H/54H 76FW53H/54H		14-5-99		

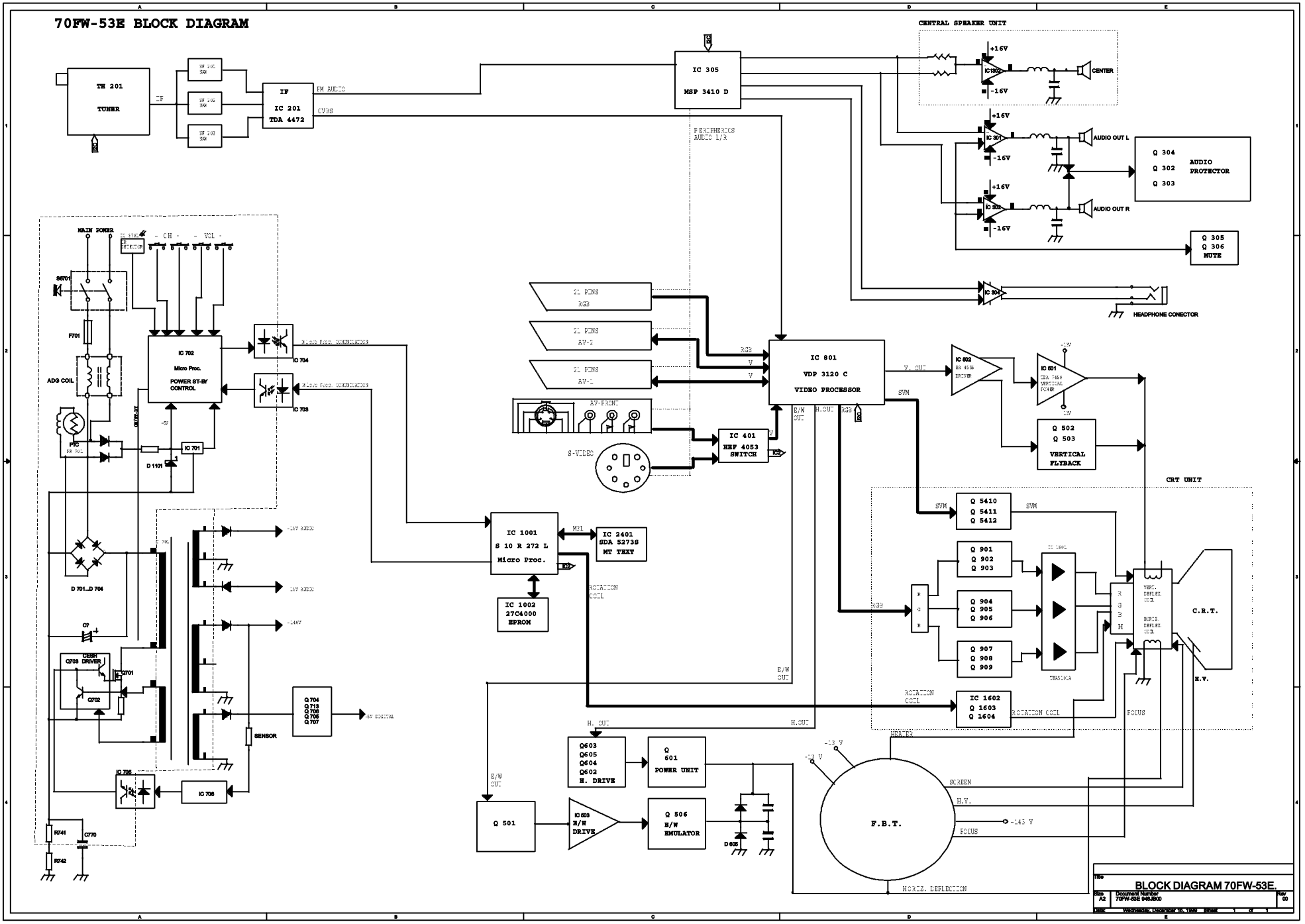
70/81FW-53E CENTRAL SPEAKER SCHEMATIC DIAGR.

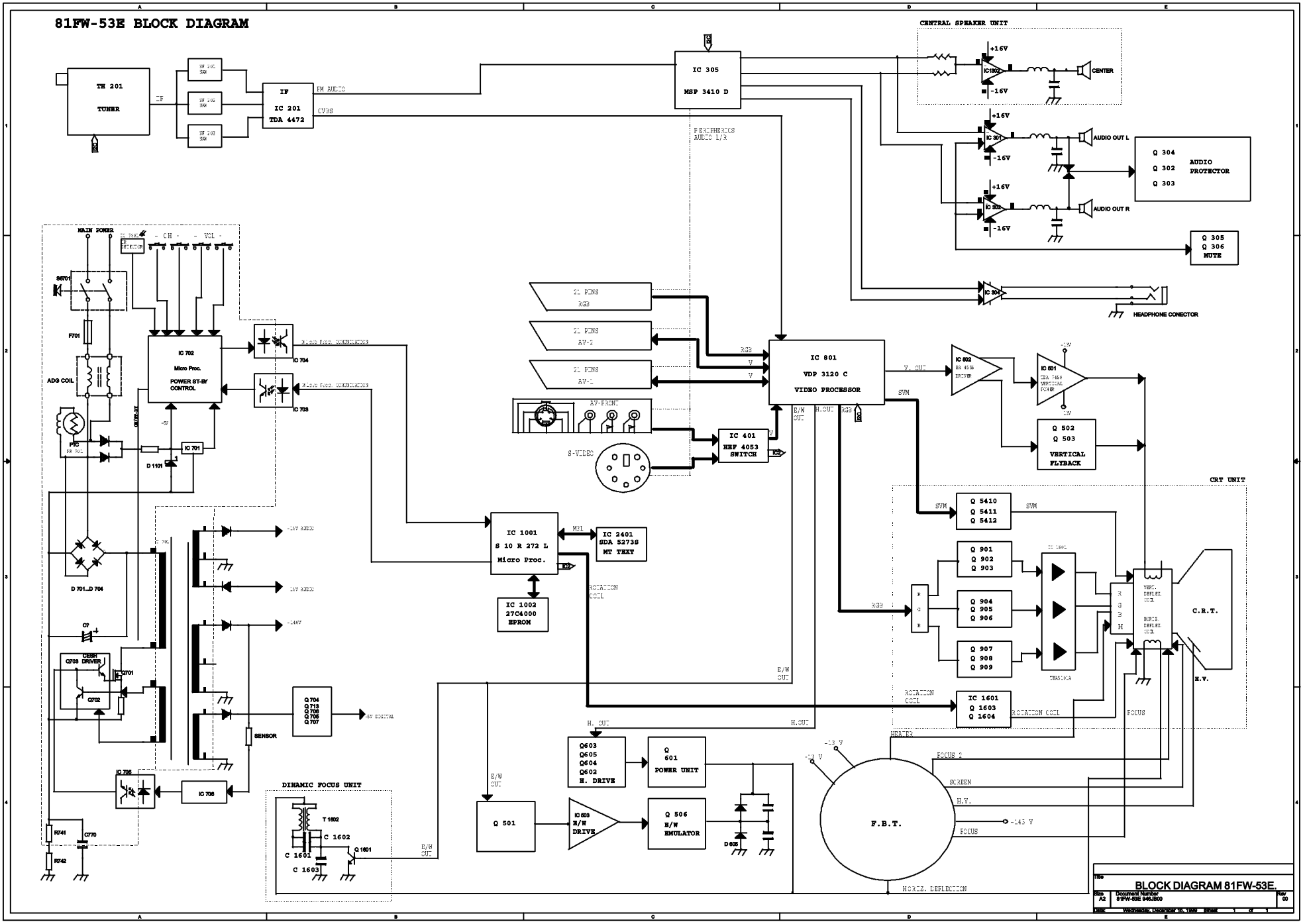


NOMBRE	CODIGO				5
CENTRAL SPEAKER	QPWBF7285BMN0				4
					3
MATERIAL	ACABADO	ESCALA	21-07-99	HASTA INF.265	2
	81/70FW53ESE			191 231 246 245	1
			FECHA	REVISIONES	N.
DIS. / DIB. / CONT. / V.B.	SHARP ELECTRONICA ESPAÑA S.A.	MODELO	76/66FW53H 81/70FW53E	FECHA	14-5-99

60FW-53E BLOCK DIAGRAM




70FW-53E BLOCK DIAGRAM
CENTRAL SPEAKER UNIT
TH 201
TUNER
IF
IC 201
TDA 4472
FM AUDIO
CVBS
IC 305
MSP 3410 D
PERIPHERICS
AUDIO L/R
+16V
-16V
IC 303
CENTER
IC 301
AUDIO OUT L
IC 302
AUDIO OUT R
Q 304
Q 302
Q 303
AUDIO
PROTECTOR
Q 305
Q 306
MUTE
IC 304
HEADPHONE CONECTOR
MAIN POWER
S6701
F701
ADG COIL
IC 702
Micro Proc.
POWER ST-BY
CONTROL
IC 704
IC 703
IC 701
D 1101
21 PINS
RGB
21 PINS
AV-2
21 PINS
AV-1
AV-FRONT
S-VIDEO
IC 801
VDP 3120 C
VIDEO PROCESSOR
IC 401
HEF 4053
SWITCH
IC 802
IC 601
Q 502
Q 503
VERTICAL
FLYBACK
CRT UNIT
IC 1001
S 10 R 272 L
Micro Proc.
IC 2401
SDA 52738
MT TEXT
IC 1002
27C4000
EPROM
ROTATION
COIL
D 701..D 704
Q 5410
Q 5411
Q 5412
Q 901
Q 902
Q 903
Q 904
Q 905
Q 906
Q 907
Q 908
Q 909
C.R.T.
H.V.
IC 1602
Q 1603
Q 1604
FOCUS
HEATER
Q603
Q605
Q604
Q602
H. DRIVE
Q
601
POWER UNIT
Q 501
IC 603
E/W
DRIVE
Q 506
E/W
EMULATOR
D 605
F.B.T.
SCREEN
-145 V
HORIZ. DEFLECTION
Q 704
Q 713
Q 708
Q 706
Q 707
SENSOR
IC 706
IC 708
R741
C770
R742
BLOCK DIAGRAM 70FW-53E.


81FW-53E BLOCK DIAGRAM
CENTRAL SPEAKER UNIT
TH 201
TUNER
IF
IC 201
TDA 4472
FM AUDIO
CVBS
IC 305
MSP 3410 D
PERIPHERICOS AUDIO L/R
+16V
-16V
CENTER
AUDIO OUT L
AUDIO OUT R
Q 304
Q 302
Q 303
AUDIO PROTECTOR
Q 305
Q 306
MUTE
HEADPHONE CONECTOR
MAIN POWER
S6701
F701
ADG COIL
PTC
IC 702
Micro Proc.
POWER ST-BY CONTROL
IC 704
IC 703
IC 701
D 1101
D 701...D 704
C7
Q703 DRIVER
Q2701
Q2702
SENSOR
Q 704
Q 713
Q 708
Q 705
Q 707
IC 706
R741
C770
R742
21 PINS RGB
21 PINS AV-2
21 PINS AV-1
AV-FRONT
S-VIDEO
IC 401
HEF 4053 SWITCH
IC 801
VDP 3120 C
VIDEO PROCESSOR
IC 602
IC 601
VERTICAL POWER
Q 502
Q 503
VERTICAL FLYBACK
IC 1001
S 10 R 272 L
Micro Proc.
IC 1002
27C4000
EPROM
IC 2401
SDA 52738
MT TEXT
ROTATION COIL
CRT UNIT
Q 5410
Q 5411
Q 5412
Q 901
Q 902
Q 903
Q 904
Q 905
Q 906
Q 907
Q 908
Q 909
IC 1601
Q 1603
Q 1604
C.R.T.
H.V.
FOCUS
HEATER
DINAMIC FOCUS UNIT
T 1602
C 1602
C 1601
C 1603
Q 1601
Q 501
Q603
Q605
Q604
Q602
H. DRIVE
Q 601
POWER UNIT
IC 503
E/W DRIVE
Q 506
E/W EMULATOR
D 605
F.B.T.
-13 V
FOCUS 2
SCREEN
-145 V
HORIZ. DEFLECTION
BLOCK DIAGRAM 81FW-53E.

PART LIST

Due to the introduction of SAP system in SEES, Service Part List is not currently available.
As soon as we get the information, it will be sent to you in an updated Service Manual.